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Plates bearing the legend "Roxburghianae" represent redrawings of Roxburgh's unpublished plates now at the Calcutta Botanic Garden, and thus represent Roxburghian species as described in his "Flora Indica" ed. 1,1 (1820), 2 (1824), and ed. 2 (1832). Where two numbers appear, one above the other, the "numerator" represents Wight's plate sequence (this number to be cited), the "denominator" a reference to the species number in Wight & Arnott's "Prodromus" (1834).

ICONES

PLANTARUM INDIÆ ORIENTALIS,

OR

FIGURES OF INDIAN PLANTS.

BY

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SURGEON ON THE MADRAS ESTABLISHMENT.

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TO

THE MEMORY

OF

WILLIAM ROXBURGH,

CHIEF OF

INDIAN BOTANISTS.

PREFACE.

In concluding the first Volume of this work it can scarcely be required of me, as happens to some authors, to prove that it is wanted or to point out in what respects it is calculated to supersede the labours of those who have gone before since in truth, so far as Indian Botany is concerned, no similar work exists with which to compare it. In its plan and execution it differs widely from those of Rheede and Rumphius, each of whom have given figures of a vast number of Indian plants, but these often so rudely and incorrectly delineated that to this day many of the plants represented are unknown and in scarcely a single instance are their analytical details, apart from general habit, such as to enable even the most accomplished Botanist to say from them to what natural order the plant belongs. The somewhat more modern works of the two Burmans and Plukenet are little if at all in advance of them, though all very useful in aiding the determination of the plant they meant in their now nearly unintelligible descriptions. Modern works are not liable to the charge of want of precision, but of these the list is scanty, those of Roxburgh, Wallich, and Royle, being the only ones expressly devoted to the elucidation of Indian plants. Those of the two first named Botanists, though works of great merit, are yet on so magnificent and expensive a scale as to limit their usefulness to the cabinet, besides which they are already nearly out of print. That of Dr. Royle though not liable, to the same extent, to these objections, is scarcely applicable to this portion of India, its illustrations being confined to the flora of the temperate regions of the Himalayas, the plants figured are almost all unknown in the warmer climate of the south; lastly, but a very small number of the plants figured in this work have been published in either of these three.

Since then, this publication does not interfere with any of its predecessors, it only remains for me to show that it is wanted here. This has been in part already done, in the prospectus which accompanied the first number to which I beg to refer. To what is there advanced I may now add, the great advantage of pictures in conveying to the mind's eye a quicker perception than words can do, of the distinctive peculiarities of an unknown plant. In descriptions, besides, when not drawn up by a professed Botanist, a laxity of terms is generally introduced, accompanied with such a want of analytical information that no one, whether a Botanist or not, can possibly make out what is meant, for in truth they convey no precise or definite idea. When we turn to the often elaborate descriptions of the older Botanists we find them utterly valueless in enabling us to picture to the imagination the plant they are describing. If we take, for example, those of Rheede, we find them, apart from his plates, nearly incomprehensible, but assisted by them, making allowance for embellishments and even occasionally for a jumble of two or three things into one, (as the drawings were not made by a Botanist) we are enabled, with the aid of specimens, to recognize most of his plants. This single fact shews the great value of even bad plates towards the advancement of Natural history, and to Botany where the number of objects of study is so great, they are, even in the present advanced state of the science, quite indispensable, especially to the young Botanist. In the preface to my illustrations I have shown, I hope satisfactorily, the great advantages derived from the natural method of studying plants, adverted to the almost universal adoption of this system by scientific Botanists, and mentioned that an intimate acquaintance with a few species only of an order, will often enable even a young Botanist rapidly to acquire a competent know-

ledge of the rest. Plates giving a good representation of the general aspect of a group may often be found to supply this knowledge and in India, where large general herbarea (for the whole world) do not exist, and little progress in the study of natural affinities has been made, are therefore nearly indispensable to the student of this system of Botany, since by seeing several species of an order arranged together and put in contrast with those of some other order, he may acquire such an idea of the appearance of a group, although he may not be able to explain it to others, as will make a strong impression on himself and prove eminently useful in advancing his own researches and in preparing his mind for entering on the more abstract and sublime parts of the study.

According to these views, the correctness of which can scarcely, I presume, be questioned, it must be evident to every one, at all conversant with the subject, that this work, however humble in execution, is far otherwise in design and promises, if sufficient support is given to admit of its extension to three or four such volumes as the one now offered to the public, to prove one of the most useful yet published on Indian Botany, by enabling all those desirous of acquiring a knowledge of the plants of this country, to familiarize themselves with appearance of groups of indigenous plants, by furnishing correct figures of numerous species of each,in a form so compact and at a cost so moderate that none can complain either of its bulk, and consequent unfitness for ready reference, nor of the heavy charge to which he must submit in possessing himself of a copy. 10 rupees being but a small charge for 100 elaborately executed quarto plates, especially in this country, where the material for getting up such a work is so very expensive. I am well aware of the imperfections in the printing of some of the plates, especially of those of the earlier numbers, a defect happily diminishing in each successive issue. But when it is considered, that Lithography is yet comparatively in its infancy, even in Europe and decidedly so in this country, that success or failure often depends on atmospheric changes not cognizable by the senses, that this climate during a considerable part of the year is most unfavourable and that at the commencement of the work, the experience which has been gradually acquired in its progress and which enables us in a great degree to counteract these obstacles, was altogether wanting, few objections will I think be urged on that head. When in addition I state that these two works were the first of the kind ever undertaken in Madras, that I had personally to superintend every thing, to supply from my private resources the stimulus to exertion on the part of those employed in a new and untried occupation, that my own knowledge of drawing and Lithography was slight, and lastly, that I had to encounter all these difficulties while attending to my own avocations, I trust ample reason will have been urged, in extenuation of even greater imperfections than either of them present, the more so when I add, that the obstacles to be overcome were such as no one, but myself, can form an adequate conception of.

To compare this work, commenced and prosecuted under such adverse circumstances, uncheered by public approbation, and so slenderly supported that hitherto it has been conducted at a very considerable loss, with the luxurious and costly Lithographic botanical works of Europe would indeed be doing it an injustice, but few I believe will be found ungenerous enough to try it by such a standard.

Our knowledge of the India Flora though extensive is far from being widely disseminated and has been obtained through the indefatigable industry of but a small number of enthusiastic votaries of science. This paucity of labourers, in a country affording so rich and interesting a harvest, is, I believe, solely attributable to the want of local Floras and the consequent difficulties with which the study of Indian Botany has been beset. To obviate

this impediment to future success and promote a more extended cultivation of this not less delightful pursuit than useful science, is the grand object I have had in view in the publication of this and the other botanical works on which I am engaged. That they will produce this effect I have scarcely a doubt and in this hope alone, this work will be continued through at least another volume, though hitherto, the support it has received has been so little commensurate with the labour and cost that, but for this expectation, it would have ended with this volume. But impressed as I am with the conviction that it will yet fulfil the object of its publication I have resolved *deo volente* to carry it through a second volume of equal extent: a resolution in which I am strengthened, not less by the daily increasing interest which every thing connected with India is acquiring and by the anxiety expressed by both the European and local governments, to obtain correct information regarding the products and resources of this rich, but until lately, much neglected division of the British empire than by the enlarging list of subscribers. Should my anticipations of success be justified by the result a third volume may possibly be added raising, the number of species figured to 1000, after which, it must, I imagine, either drop altogether or be resigned into other hands. The latter would of the two, in my opinion, be the preferable alternative, as it could not but be a source of regret, after forming the machinery for carrying it on, that it should so soon cease to work, while there remains so much to be done. The flora of India, calculated at a very low rate, exceeds 10,000 species, excellent figures of about 2000 of which were left by Roxburgh. Most of these are still unpublished, but are now, by the public spirit and liberality of Dr. Wallich in course of publication here. To allow two thirds of that noble collection to remain unknown, through want of present support to this work, and the knowledge of the indefatigable labours of that excellent man be longer left in obscurity, while the means of bringing them to light are not only at hand but actually working, would indeed be a source of deep regret to future Botanists, but which, I fear, can only be avoided by the living Botanists of the present time extending a more liberal patronage to this publication, which, exclusive of the Government aid, has not paid for paper on which a small impression is printed, and holds out no inducement to any one to embark in such an unprofitable concern.

One other advantage to which this work may lay claim over most other works of a similar description, consists in the rapidity of publication. Smith's English Botany, which extended to 2592 plates, was 24 years in publishing: at the rate of publication which this work has attained it would in that time extend to upwards of 5000 species, but supposing only half that number published, the work will form, beyond all comparison, the most valuable book of reference for Indian Botany ever published or likely to be even attempted for yet many years. With these few remarks I conclude this brief preface and leave the work to speak for itself and most cordially hope it may not speak in vain, but trust it will yet become one of as constant reference as the eminently praiseworthy and, for the time they were undertaken and executed, meritorious labours of the excellent Van Rheede and prove to Indian Botanists, so far as it may extend, what Smith's English Botany has long been to British ones a work of unexceptionable authority.

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No. I.

EXPLANATION OF PLATES.

1 — 35 Guatteria longifolia. Wall.—1. Flowering branch—*natural size* —2-3. Back and front views of a stamen—4. Ovary cut vertically, ovule, solitary—*magnified*.

2 — 73 Polanisia icosandra—*natural size*—2. A dissected flower, the stamens removed showing the forms and relative size of the sepals, petals, style and stigma—3. The same, the petals removed to show the stamens—4. An anther after having shed its pollen—5. Ovary, style and stigma—6. Mature fruit after dehiscence, showing the mode of attachment of the seed—7. A portion of the placenta and attached seed—*magnified*—8. A seed cut vertically—*all more or less magnified*.

3 — 160 Mollugo disticha—*natural size*—2. Sepals—3. The same opened, showing the insertion of the stamens—4. A capsule burst—5. A portion of the placenta removed, to show the mode of attachment of the seeds—6. A seed—7. The same cut longitudinally, showing the embryo rolled round the mealy albumen—*all magnified*.

4 — 171 Lebretonia procumbens—2. Calyx, involucrum, ovary, style and stigmas—3. Staminal tube formed by the union of the filaments —4, An anther—5. Capsule—6. The same cut transversely—*all more or less magnified*.

— 176 Hibiscus lampas—*natural size*—2. Staminal column—3. Calyx, involucrum, ovary, style and stigma—4. A petal removed—5. Anthers and pollen—6. Fruit cut vertically—7. The same cut transversely—8. A seed cut transversely—*all more or less magnified*.

6 — 178 Hibiscus lunarifolius—2. Ovary, stamens and stigmas—*natural size*—3. Staminal tube, adhering to the bottom of the corolla, split up —4. An anther—5. Style, and stigmas—6. A young fruit surrounded by its involucrum and calyx—7. The same split vertically in the line of the valves—8. The same cut transversely, showing its five cells, and the arrangement of the seed in them—9. A portion of a leaf magnified, to show the stillate pubescence so common in the order —*all more or less magnified*.

7 — 189 Paritium tiliaceum—2. Calyx, ovary, style, stigma, and staminal tube—3. An anther—4. Ovary cut vertically—5. Capsule full grown and splitting—6. Capsule cut transversely—7. A carpel separated, showing the introflexed margin of the valves which give the 10-celled appearance to the fruit—8. A seed—9. The same cut lengthwise—10. The embryo removed its crumpled foliaceous cotyledons spread out to show their form—*all more or less magnified*.

8 — 197 Thespesia populnea—*natural size* —2 Calyx, staminal, tube, ovary and stigma, with one petal left to show the relative size of the parts—*natural size*—3. Staminal tube removed and split open—4. An anther—5. Ovary, style and stigma—6. Ovary cut vertically—7. Stigma—8. A young capsule cut transversely—9. Portion of a placenta, with two young seeds attached—*all magnied*.

9.10.11 — 198 These three plates represent what I consider three varieties of our Indian cotton, but which Roxburgh and others esteem distinct species, viz.—9 Gossypium obtusifolium Roxburgh, with the usual dissections, 10 Gossypium arboreum and 11 G. herbaceum. The two last are copied from Royle's Illustrations.

12 — 205 Abutilon indicum—*natural size*—2. Staminal tube adhering to the base of the petals—3. An anther shedding its pollen —4. The same before opening—5. Calyx, ovary, style and stigmas—6. A capsule divided vertically, showing the position of the seeds—7. A seed—8. The same cut longitudinally, showing the position of the embryo and radicle—9. Embryo removed and slightly opened—*all more or less magnified*.

13 — 334 Bergera Koinigii—*natural size*—2. A flower partially dissected, showing the calyx, corolla, stamens and stigma—3. Ovary cut vertically, showing the pendulous ovules—4. The same cut transversely, showing the two cells—5. A cluster of fruit—*natural size*—6. A fruit cut transversely—7. A portion of a leaf magnified, to show the position of the pellucid dots—*all magnified*.

14 — 339 Clausena Willdenowii—2. A flower, the front sepal removed to show the attachment of the petals—3. The same, the petals removed showing the stamens, style and stigma—4. All the stamens but one removed, showing the ovary, style, stigma, and depression on the filament—5. Ovary cut vertically, showing the ovules—6. The same cut transversely—7. A fruit cut transversely, showing that all the ovules but one have aborted—8. A seed—9 and 10. Back and front views of the seed lobes, with the embryo at the base—*all more or less magnified*.

15 — 341 Feronia elephantum—*natural size*—2. A dissected flower, showing the ovary and the filaments all apparently united into a tube by dense tufts of hair at the base—3. Ba ck and front views of detached anthers, showing the tufts of hair on the filaments—4. Style, stigma and ovary, cut vertically—5. Ovary cut transversely—6. Full grown fruit cut transversely—*all magnified*.

16 — 342 Ægle marmelos—*natural size*—2. A flower, the petals removed to show the stamens and stigma—3. The calyx thrown back to show the torus, insertions of the stamens, the ovary and stigma : the upper figure, a detached petal—4. A transverse section of the fruit—5. A seed—6. The same cut transversely—*all more or less magnified*.

17 — 396 Azadirachta indica—*natural size* —2. The staminal tube removed and opened—3. Ovary, style and stigma, with one petal left to show its form—4. Ovary cut vertically, showing its pendulous ovules —5. Ovary cut transversely—6. A cluster of fruit—7. A fruit cut transversely—*all more or less magnified*..

18 — 467 Oxalis corniculata—*natural size*—2. A flower opened lengthwise, to show its different parts—3. The ovary cut vertically —4. The same cut transversely, showing its 5 cells—5. A seed detached —*all more or less magnified*.

19 — 467 Berchemia parviflora — *natural size*—2. A dissected flower, showing the ovary sepals, minute scale-like petals opposite the stamens and somewhat embracing the anthers—3 and 4. Ovary and stigma, the former cut transversely and vertically—5 and 6. Full grown fruit cut transversely, showing that they may be either 2 or 3-celled, with one seed in each cell—*all magnified*.

20 — 723 Cicer arietinum—2. A dissected flower showing all its parts —3. An anther—4. The ovary cut hwise—5. A Legume —6. The same opened—7 &c. the different parts of a dissected seed—*magnified*.

EXPLANATION OF PLATES.

21/94 Capparis grandis—*natural size*—2. A dissected flower, showing the sepals, torus, stamens, gynophore, and ovary, with single detached petal—3. A fruit cut transversely—*all magnified.*

22/143 Trichaurus ericoides—*natural size*—2. A flower, showing the relative size of the different parts—3. The same, the sepals and petals removed showing the insertion of the stamens; the ovary, style and stigmas. The detached figure the stigmas more magnified and a petal—4. Stamens—5. A diagram, showing the arrangement of the parts of the flo wer—6. A mature capsule burst—7. A seed with its beak—8. A portion of a branch showing the scale-like leaves—*all magnified.*

23/250 × 51 Melhania abutiloides—*natural size*—Branches villous, leaves pubescent above, tomentose beneath—2. A dissected flower, showing the 3-leaved involucel, (one leaf detached) 5 sepaled calyx enclosing the ovary, and the corolla and stamens detached —3. Detached stamens showing their union at the base—4. The capsule surrounded by the persistent involucel—5. The ovary cut transversely —6. One of the carpels, showing by the central position of the partition the loculicidal dehiscence—7. A portion of the under surface of a leaf magnified, to show the pubescence on the leaves which could scarcely have been represented with sufficient delicacy if not magnified.

24. Nephelium rubrum—copied from Roxburgh's drawings deposited n the Calcutta Botanic garden.—This figure represents a portion of the drawing *full size.*

25. The same—A greatly reduced figure of the whole—2. A flower opened and magnified, showing the sepals, petals, linear incurved anthers, obcordate ovary, and 2-cleft stigma—3. Ovary cut vertically, showing its two cells, and solitary e rect ovules—4. Berries—5. Cu transversely—6. Seed lobes separated, showing the small embryo at the base—7. Embryo detached. See Roxb. Fl. Ind. 2 pg, 272.

26/299 × 300 Vateria Roxburghiana—2. Sepals and ovary, with a single detached petal—3. Sepals and petals removed, showing the stamens and stigma—4-5. Detached stamens, back and front views—6. Ovary cut transversely 3-celled—7. A full grown fruit cut transversely, showing from the solitary seed that all the ovules except one had aborted—8. The same cut vertically, the circular spots are caused by irregularities in the form of the seed lobes, which, when thus cut are divided in several places—9. A seed, *natural size*—10. The same magnified, showing the manner of its suspension from the top of the cell—*all more orless magnified.* I am indebted to the unaided ingenuity of the artist for these analysis who was not at the time of making them under my superintendence, and I have not since had the means of verifying them myself.

27/301 Vatica Tumbugaia—*natural size*—2. Dissected flower, corolla detached to show the sepals, stamens, and stigma—3-4. Stamens back and front views, anthers tipped with a tuft of hairs—5. Ovary cut transversely 3-celled, with two ovules in each—6. The same cut vertically, showing the pendulous ovules, conical style, and three stigmas —7. A mature fruit, with its enlarged wing-like sepals—8. The same, the sepals removed—9. A seed, the testa removed to show the superior radicle---*all more or less magnified.*

28/424 Vitis lanceolaria—*natural size*—2. A flower opened, showing the petals, stamens, ovary, and sessile rough stigma—3. The same petals re moved—4. Stamens—5. Ovary cut vertically, ovules solitary in each cell, erect --6. The same cut transversely--7. A seed--*all more or less magnified.*

29/560 Crotalaria speciosa--*n atural size*--2. A flower detached to show the relative size and position of the involucel, calyx and cor olla--3. The same forcibly opened and the petals removed to bring into view, the stamens, style and stigma, showing all the filaments united (monadelph ous,) and the anthers alternately linear and globose --4 The petals detached--5. Back and front views of one of the linear anthers--6. The ovary cut longitudinally, showing the ovules--7. A pod about half grown--8. The same opened--9. A seed--10. The same cut transversely, not yet mature--11. A portion of a leaf magnified --*all more or less magnified.*

30/583 Crotalaria bifaria--*natural size*--2. A dissected flower, the corolla removed and the calyx opened, showing the monadelphous stamens, ovary and stigma, the anthers oblong and globose--3. The petals--4. Ovary cut open to show the ovules--5. Leaves magnified to show the pubescence which is very fine---*all more or less magnified.*

31/384 Crotalaria evolvuloides--*natural size,* but a large form, and perhaps appears more hairy than in nature through the tendency of such lines, to become thick in course of printing--2. Petals --3. Calyx forcibly opened to show the stamens, ovary and style--4. Ovary cut lengthwise--5. A pod--6. The same opened--7. A seed.---*all more or less magnified.*

32/667 Sesbania Œgyptiaca--*natural size*--2. A dissected flower, the petals removed, the calyx laid open to show the diadelphous filaments, 9 and 1, and the anthers all equal--3. A portion of a pod opened, showing the seeds separated by spurious partitions--4-5. Sections of a seed--*all more or less magnified.*

33/727 Abrus fruticulosus--*natural size*--2. A dissected flower wings and keel adhering, stamens monadelphous, much longer than the ovary and style--3. A portion of the pod opened--4. A seed --5. The same, the testa and one seed lobe removed to bring into view the embryo and radicle at the small end--*all more or less magnified.*

34/750 Phaseolus rostratus--*natural size*--2. A flower, the vexillum removed, and the wings thrown back to show the spirally twisted keel--3. The (petals removed, showing the spirally involute diadelphous stamens and style--4. A portion of the ovary opened, showing the ovules and interposed cellular partitions--*all more or less magnified.*

35/781 Mucuna monosperma--*natural size*--2. A dissected flower, the petals removed and the calyx partially opened, showing the diadelphous stamens, (9 and 1) anthers oblong and globose, the latter rough--3. The ovary--4. Same cut lengthwise to show the solitary ovule--*all more or less magnified*--5. A legume--6. The same opened, showing the seed with its long linear hilum--*natural size.*

36/809 Cæsalpinia paniculata--*natural size*--2. A flower opened to show the different parts--3. The ovary, the calyx and petals, except the vexellum, removed, to show the attachment of that petal--4. A legume opened to show the solitary seed--5. A seed cut transversely. —*all more or less magnified.*

37/873 Cæsalpinia sepiaria--*natural size*--2. A desected flower but badly represented, in as much as it seems to place three calycene lobes in place of two, next the axis--3. A legume, *natural size*--4. A seed--5. The same, a portion of the testa removed to show the cotyledons and straight radicle *in situ*--6. The cotyledons removed--7. Leaves magnified to show the pubescence.—*all more or less magnified.*

38/123 Rosa Leschenaultiana--*natural size*--2. A dissected flower, the petals removed, and the segments of the calyx thrown back to show the contraction of the hollow receptacle round the style--3. An anther--4. The tube of the receptacle cut vertically to show the ovaria concealed within--5. A fruit--6. The same cut vertically--*all more or less magnified*--7. A cluster of fruit--*natural size.*

39/1100 Passiflora Leschenaultii--*natural size*--2. A dissected flower, the calyx removed, and the corolla with one row of the coronal filaments detached, leaving the interior row surrounding the ovary, stamens and styles--3. Two of the coronal filaments more magnified--4. A flower cut vertically, showing the stalk of the ovary surrounded by the united filaments of the stamens, and surmounted by the styles and stigmas--5. The ovary cut transversely--6. The same cut longitudinally.

40/1291 Guetarda speciosa--*natural size*--2. A dissected flower, showing the tubular truncated calyx: the corolla laid open, the stamens adhering to its inner surface the whole length of the tube, equalling the number of its segments, and alternate with them--3. Ovary cut vertically--4. The same cut transversely showing it, in this instance, 5-celled--5. A full grown fruit cut across--6. The same cut vertically, bringing into view through their whole length two of the curved cells with their enclosed seed--7. A seed removed--*all more or less magnified.*

No. III.

EXPLANATION OF PLATES.

41
—— Hibiscus hirtus—*natural size*—2. Staminal tube, with a portion of
186 the styles and stigmas—3. An anther—4. A capsule—*all magnified.*

42
—— Decaschistia crotonifolia—*natural size*—2. Staminal tube, with
191 the cohering clavate stigmas projecting—3. The calyx split open, the corolla and stamens removed, showing the ovary, style and stigma, with the projecting points of the involucel—4. A young capsule cut transversely, showing its 10 cells and 10 valves, with a solitary seed in each—5. The staminal tube split open, and its attachment to the corolla shown—6. An anther—7. The same after having shed its pollen—8. A mature capsule—*natural size*—9. Half of one of the cells with a seed attached, the remaining partition showing the loculicidal dehiscence—10 (9) 11. Portions of the upper and under surfaces of the leaf magnified, to show the stellate pubescence above and the tomentum beneath, *all, not otherwise mentioned—more or less magnified.*

43 Nephelium Litchi—*natural size*—copied from Roxburgh's drawing—2-3. Dissected male flowers, one with 4, the other with 5 lobes to the calyx—4. A bisexual flower—5. The ovary cut vertically, showing the two cells.

44
—— Grewia columnaris—*natural size*—2. A dissected flower, show-
279 ing the sepals detached, the small petals enclosing and concealing the ovary, the stamens, the style, and 4-lobed stigma—3. Back and front views of the anthers—4. The ovary on its columnar pedicel, showing the place of insertion of the petals and stamens—the detached figure a petal—5. Ovary cut transversely—6. Vertically—7. A full grown fruit cut transversely, 4-celled, two of the nuts or cells with 2 seed in each, two with solitary seeds—8. A seed removed from the nut—9. The same cut longitudinally to show the embryo—10. The embryo removed —*all magnified.*

45
—— Grewia rotundifolia—*natural size*—2. A dissected flower, the
291 sepals separated and thrown back to show the smaller petals, the stamens and stigma—3. A petal showing the nectarial gland at the base—4. Ovary, style, and stigma—5. Stamens back and front—6. Ovary cut transversely, 2-celled, with two ovules in each—7. The same cut vertically, showing the ovules superposed—8. A drupe, with two 2-celled nuts—*all more or less magnified.*

46
—— Elæocarpus oblongus—*natural size*—2. A dissected flower, the
296 petals removed, one petal detached to show its form and fimbriated margin—3. The ovary with its glands and two stamens—4. The ovary cut transversely, 3-celled, with two collateral ovules in each—5. The same cut vertically—*all magnified.*

47
—— Cleyera gymnanthera—*natural size*—2. A flower opened, show-
310 ing all the parts *in situ*—3. The same dissected, the stamens adhering to the bottom of the petals—4. Anthers back and front views—5. An ovary cut vertically, showing the pendulous ovules—6. The same cut transversely—7. A mature fruit, a portion of the pericarp removed to show the pendulous seed—*all more or less magnified.*

48
—— Thalictrum glyphocarpum—*natural size*—2. A flower—3-4.
5 Anthers back and front views, showing their extrorse or rather marginal dehiscence—5. Ovary cut vertically, showing the solitary ovule.

NEUROCALYX—*HOOKER.*

GEN. CHAR. Calyx tube obconical. Limb 5-parted, persistent. Corolla rotate, 5-part-ed. Stamens 5. Filaments 0. Anthers large united into a tube. Ovary turbinate, crowned with an opercular disk, 2-celled, many seeded, seeds attached to a large central placenta. Style filiform. Stigma simple or discoid, capsule 2-celled, seeds numerous, dotted on the surface.—Herbaceous plants, with entire lanceolate leaves, large, variously divided, stipules, axillary erect or pendulous racemes, and bractiate flowers.

N. *Zeylanicus,* Hooker—Stipules many cleft, segments subulate: racemes erect.

N. *Hookeriana,* R. W.—Stipules 2-cleft, segments acuminate, racemes pendulous.

52
—— Neurocalyx Hookeriana--*natural size*--2. A flower opened,
1245 × 46 showing the calyx, corolla, and staminal tube--3. Staminal tube removed and split open, showing the form and union of the anthers --4. The ovary crowned by the persistent calyx, style and stigma--5. The same cut transversely, showing its two cells and numerous ovules, covering the large central placenta--6. A seed--*all magnified.*

49
—— Ranunculus subpinnatus—*natural size*—2. A flower, the petals
10 removed—3. A seed, *both magnified.*

50
—— Vitis pallida—*natural size*—2. A flower full blown, showing
413 the stamens opposite to the petals—3. A berry cut transversely, one seeded—*all magnified.*

51
—— Vitis quadrangularis—*natural size*—2. A flower—3. The same
410 the petals removed, showing the insertion of the stamens—4. Ovary cut vertically--*all magnified*--5. A cluster of berries--*natural size.*

53
—— Coffea arabica—*natural size*--2. Corolla and stamens—3-4.
1339 Anthers—5. Ovary, style and stigma—6. Ovary cut vertically—7-8. Berry cut transversely and longitudinally—9-10-11. Seed—*all magnified.*

54
—— Geophilla reniformis—*natural size*--2. Corolla split open to
1343 show the enclosed stamens—3. The ovary and calyx--4. An anther--5. The ovary, style and stigma--6. A fruit cut transversely--*all more or less magnified.*

55
—— Salacia pomifera--*natural size*--2. A flower showing the 5
366 petals, 3 stamens and disk--3. A side view of the same, the petals removed, showing the broad base of the filaments, and the short thick stile--4. A young fruit cut transversely, 1-seeded--5. A fruit *natural size*--6. The same cut transversely--7. A seed--*Except in the instance specified--all magnified.*

NORYSCA—*SPACH.*

GENERIC CHARACTER. Sepals 5, coriaceous, equal, erect after expansion. Petals oblique, deciduous. Stamens 5-delphous, androphores, (the united portion of the filaments) short deciduous. Ovary 5-celled: ovules numerous. Styles 5, sometimes united to near the apex. Stigmas minute, suborbiculate. Capsule 5-celled, subcoriaceous. Placenta pyramidal, 5-sided, with five crests, (the crests bearing the seeds) seed minute, nearly straight.

56
—— Norysca mysorensis—*natural size*—2. A dissected flower, showing
345 the sepals, ovary, styles, stigmas and a detached petal—3. A bundle of stamens, showing the relative length of the androphore, and the free portion of the filaments—4 Anthers—5. Ovary cut transversely—6. Mature capsule burst, showing the septicidal dehiscence—7. One carpel with its seed cut transversely—8. The central placenta as it appears after the cells of the capsules have separated and shed their seed—9. Seed dissected—*all more or less magnified.*

57
—— Lablab vulgaris—*natural size*--2. A dissected flower, showing
772 the bractea and sepals *in situ*, the petals detached, the stamens, style and stigma--3. An ovary cut open, showing the 4 ovules--*all magnified*--4. Two pods detached--5. A pod opened to bring into view the seed--*natural size.*

58
—— Erythrina indica--a raceme of flowers and portion of a leaf--
798 *natural size*--2. A flower somewhat opened--*natural size*--3. The same dissected, showing the wings and keel, adhering by pairs, separated, the calyx, pedicelled ovary, solitary stamen, &the remaining stamens, with the united filaments, detached—4. Anthers--5. The ovary cut longitudinally, containing 5 ovules--6. The stigma--7. A pod, *natural size*--8. A portion of the same opened to show the seed--9. The seed cut longitudinally and transversely--10. A small portion of a leaf magnified to show the pubescence--*all except the pod more or less magnified.*

59
—— Pongamia glabra—*natural size*--2. A dissected flower, showing
805 the truncated calyx opened, the petals removed and separately represented, the wings and keel adhering, the stamens diadelphous, (9 and 1)--3. A pod opened to show the solitary seed--4 and 5. Seed lobes and embryo--*all magnified.*

60
—— Odina wodier--*natural size*--2. A male flower, showing the
530 sepals, petals, stamens, and sterile ovary--3. The same, the petals and stamens removed to bring into view the disk and attachment of the sterile ovary--4. Fertile bisexual flowers, showing the ovary, 4 stigmas, and the stamens much shorter than those of the male flower.—5 The ovary cut vertically showing the solitary pendulous ovule 7-8—The fruit cut transversely and vertically--9. The seed lobe removed from the nut and testa, mottled on the surface, the small figure *natural size,* with that exception, *all more or less magnified.*

No. IV.

EXPLANATION OF PLATES.

61. Monocera rugosa R. W. *Elæocarpus rugosus* Roxb.--*copied full size from Roxburgh's drawing.* (Leaves glabrous, stamens about 30)—2. An expanded flower, the stamens removed to show the torus, ovary, and style—3. A detached stamen—4. The ovary cut vertically—5. The same divided transversely—6. A full grown fruit —7. The same cut transversely—8. The nut removed and similarly divided showing its 2 cells—9. The same divided vertically to show the inverse embryo.

62. Monocera tuberculata W and A. *Elæocarpus bilocularis,* Roxb. MSS. *E. tuberculatus,* R. Fl. Ind —*slightly reduced from Roxburgh's figure.* (A large tree, leaves smooth above, hairy, particularly on the veins, beneath, stamens about 70)—2. Ovary and 2 stamens removed from the flower—3. Ovary cut vertically—4. The same cut transversely—5. A full grown fruit—6. A nut—7. The same cut transversely—8. The seed cut vertically to show the inverse embryo —9. The embryo removed.

63. Monocera Roxburghii R. W. *Elæocarpus aristatus* Roxb.—*copied full size from Roxburgh's drawing.* (A considerable tree, leaves glabrous, firm in texture, stamina from 40 to 50, nut usually 1-celled) —2. Ovary, torus and stamens—3. Ovary cut vertically—4. The same transversely—5. Full grown fruit—6. The same cut transversely, showing it 1-celled—7. Cut vertically, showing the oval inverse seed.

64. *Elæocarpus robustus* Roxb.—*copied full size from Roxburgh's drawing.* (A very large tree native of Silhet, leaves glabrous, thick and of a hard texture: flowers white, stamens about 50, bearded)— 2. A detached petal—3. A stamen—4. The ovary surrounded at the base by its nectareal glands—5. The same cut transversely, 3-celled —6. Cut vertically—7. A full grown fruit—8. The nut cut transversely, one of the cells aborted—9. Cut vertically, showing the seed in each cell, inverse.

65. Elæocarpus lanceæfolius Roxb.—*copied full size from Roxburgh's drawing.* (A middling sized tree: leaves glabrous: flowers white, stamens 15, bearded)—2. A detached petal—3. A stamen—4. The ovary and glands—5. The same cut transversely, 3-celled—6. Cut vertically, 2 superposed ovules—7. A full grown fruit—8. The same cut transversely—9. Cut vertically, showing the ovate inverse seed.

66. Ganitrus sphærica, *Gært: Elæocarpus ganitrus,* Roxb.—*copied full size from Roxburgh's drawing.* (A tree, leaves glabrous on both sides, but sericeous when very young, flowers white, stamens 40, bearded, no nectareal glands)—2. An expanded flower, showing the ring of stamens—3. A detached stamen—4. The ovary and torus—5. The same cut vertically—6. Cut transversely—7. A full grown fruit —8. The nut—9. Cut transversely, showing its 5 cells—10. A detached seed—11. The same cut vertically, showing its inverse embryo.

Obs. The nuts of this species are much used by Fakeers, &c. for making rosary beads.

67. Polygala Wightiana, Wall.—*natural size.* (Herbaceous, glabrous, flowers yellow)—2. A flower, *a* exterior sepals, *b* wings, *c* the corolla, keel and side petals—3. Sepals, ovary, style, and stigma— *a*, *b* as before, *e* ovary, *f* style, *g* stigma—4. Corolla and stamens removed and forcibly opened, to show the relative size of the parts— 5. A stamen—6. The ovary with 2 pendulous ovules—7. The full grown capsule—8. A seed—9. The same cut transversely—10. Cut vertically, showing the radicle next the hilum—11. Seed lobes, the testa removed.

68. Abutilon crispum, G. Don—*natural size.* (Herbaceous, leaves slightly villous above, pubescent beneath, carpels membranaceous, waved and curled, inflated, flowers yellow)—2. A dissected flower, petals removed, sepals partially opened to show the ovary, style, and stigmas—3. Corolla and stamens, filaments united below into a tube, free above, adhering to the base of the petals—4. Stamens showing the anther 1-celled—5. Ovary cut transversely—6. Cut vertically—7. A full grown fruit divided vertically, *natural size—with the exceptions mentioned all more or less magnified.*

69. Lagerstrœmia parviflora, Roxb.—*natural size.* (A tree, leaves downy beneath, flowers white)—2. A forcibly expanded flower—3. Stamens—4. Ovary, styles and stigmas—5. Ovary cut vertically—6. The same cut transversely, showing its 3 cells—7. A full grown fruit --8. The same bursting, *both natural size*--9. A seed with its wing-- *all with the exceptions mentioned more or less magnified.*

Obs. This is not the same as our var β from Courtallum, but is the Circar plant Roxburgh describes. In the Courtallum plant the flowers are very numerous, panicled, with small globose fruit shorter than the calyx. *L. microcarpa,* R. W.

70. Tetracera Rheedii D. C. Two branches, one in flower, the other in fruit, *natural size*—2. A dissected flower, the sepals removed, a petal detached to show its form: the 4 ovaries and styles with 2 stamens left to show their transverse anthers--3. A carpel opened, showing one ovule somewhat advanced, the others abortive.

71. Sclerostylis parvifolia R. W. marked by mistake, *S. atalantioides.* See Illustrations page 109--*natural size.* (A somewhat junior specimen)--2. A flower--3. The same, petals removed to show the filaments united below into a tube--4. Detached stamens--5. Petals and stamens removed to show the ovary, style, and stigma--6. Ovary cut vertically, showing the collateral pendulous ovules--7. The same cut transversely showing the 2 cells--*all more or less magnified.*

Obs. In their more advanced stages the racemes and pedicels elongate considerably beyond what they are here represented.

72. Sclerostylis Roxburghii R. W. *Amyris simplicifolia* Roxb.--*copied full size from Roxburgh's drawing.* (A small tree, the petiols jointed, flowers white, native of Pulo Penang. A species allied in the form of the leaves is found in Malabar, but the flowers are yet unknown)--2. A flower forcibly expanded, showing the sepals, petals, half the stamens, and ovary. The remaining stamens removed to show the ovary--3. Ovary cut transversely.

73. Syzygeum Zeylanicum, D. C. *Myrtus Zeylanica* Lin. *natural size.* (A large shrub or small tree, leaves hard, coriaceous, pale yellowish when dried, calyx pruinose, berry globose, white, 1-seeded)-- 2. A flower before expansion, the petals removed and separated to show their form (they usually separate as one in form of a calyptra or lid to the flower)--3. Five petals of another flower to show that they sometimes vary in number--4. Stamens--5. The ovary, sepals, and style, after the fall of the petals and stamens--6. An ovary cut vertically, with 2 stamens left to show their perigynous insertion--7. The same cut transversely--*all more or less magnified.*

74. Cardiospermum canescens, Wall.--*natural size.* (Stem and leaves clothed with hoary pubescence, flowers white)--2. An expanded flower--3. One of the side petals with its large petaloid scale--4. A lower petal with its glandular crested scale--5. The two lower scales removed to show their form and relative position to each other during anthesis (flowering)--6. Stamens and ovary detached from the floral envelopes--7. Stamens--8. The ovary cut transversely--9. Cut vertically--10. A full grown but immature capsule, cut transversely-- *all more or less magnified.*

75. Ranunculus reniformis Wall. *natural size.* (Herbaceous, erect, hairy, flowers yellow)--2. A petal showing the scales at the base--3. Stamens--4. The dilated torus covered with ovaries--5. A capsule cut vertically, showing its solitary seed--*magnified.*

Obs. This is the type of the species. The form from which the character given in the Prodromus was taken--the one figured in the Illustrations No. 2. presents a form so distinct that it might be considered a different species did not intermediate forms prove them only varieties.

76. Grewia hirsuta Vahl.--*natural size.* (A considerable shrub, full grown leaves, nearly glabrous above, tomentose beneath, sepals pale brownish, petals white, fruit four, 2-celled, nuts)--2. A flower forcibly opened to show the relative size of the different parts--3. A stamen, showing its 2-celled anthers--4. A dissected flower, showing the short torus, numerous filaments, the penicillate stigma, and in the detached petal the nectariferous ciliated gland near the base--*all more or less magnified.*

Obs. The peculiar stigma of this species is quite characteristic.

77. Calophyllum Inophyllum--*natural size.* (A large and highly ornamental tree, flowers pure white)--2. A dissected flower, the sepals and 2 petals removed to show the polyadelphous filaments--3. An anther--4. The ovary, the sepals thrown back to bring it fully into view--5. The same cut vertically, ovule solitary, erect--6. Two full grown fruit, *natural size*--7. The same cut transversely--8. The seed removed--9. A seed lobe, showing the embryo at the base--10. A portion of a leaf, to show the parallel venation--*all, with the exception mentioned, more or less magnified.*

78. Leea staphylla α Roxb. *natural size.* (A scandent glabrous shrub)--2. An expanded flower, showing the relative sizes of the calyx, corolla, and stamen tube--3. The latter opened to show the interior of the stamen tube or urceolus, the ovary and stigma--4. The urceolus removed from its connections with the corolla, the filaments of the fertile stamens separated from the tube, and seen hanging like tapes from its back.

79. Hymenodictyon excelsum Wall. *Cinchona excelsa* Roxb. Cor. pl. (copied from Roxburgh's Coromandel Plants, with a view of making more generally known a plant supposed to possess medicinal properties analogous to those of Peruvian bark)--2. An expanded flower-- 3. The corolla split open to show the position of the stamens--4. Ovary and calyx--5. The capsule burst, dehiscence loculicidal--6. The same cut transversely, showing the form of the placenta.

Obs. The febrifuge properties of the bark of this plant having recently engaged the attention of the Drug Committee, I have republished this figure from that now very scarce work, Roxburgh's Coromandel plants, in the hope that, making it generally known to the present medical service may be productive of advantage, by enabling those favourably situated for getting it to institute experiments on the bark.

80. Hymenodictyon obovatum Wall. *natural size*--(The figure differs somewhat from the description but not apparently enough, to constitute it a distinct species)--2. A dissected flower, the corolla separated from the ovary and split open, the calyx superior--3. Ovary cut transversely--4. The same cut vertically--5. A young capsule, *natural size*--6. The same cut transversely--7. The same cut vertically--8. The mass of imbricated seed removed from one cell--9. A single seed detached, *all with the exception mentioned more or less magnified.*

Obs. This figure is here introduced with the same object in view, as the last, and both with the hope that beneficial consequences may result.

ERRATA.

For Sclerostylis atalantioides, plate 71, *read* S. parvifolia, R. W.-- For Hymenodyction, plates 79 and 80, *read* Hymenodictyon.

No. V.

EXPLANATION OF PLATES.

81. *Buchanania intermedia* (R. W.) Leaves obovate, spathulate, membranacious: panicles glabrous, flowers congested—*Naggarie Hills, near Madras.*

Intermediate between *B. latifolia* and *angustifolia*, having the obovate spathulate leaves of the former, but much smaller and not coriacious. In this last respect it also differs from the latter, as well as in the form of the leaves; which in *B. angustifolia*, are linear lanceolate, pointed.

1. A flowering branch, *natural size*—2. A flower—3. The same, the petals removed—4. Stamens—5. Sepals, petals, and stamens removed, the disk opened and partially thrown back to show the solitary fertile ovary, and four sterile pistils—6. The ovary opened, showing the ascending curved podosperm and solitary pendulous ovule, *all more or less magnified.*

82. *Grewia oppositifolia,* Buchanan.—" Arborious: leaves rhomboid-ovate, gland-serrate, scabrous: peduncles, leaf opposed, 3-5 flowered: petals lanceolate: drupe 1-4 lobed: nuts (4) 1-celled." —Roxb. Fl. Ind. 2 page 584.

1. Flowering branch, *natural size*—2. Sepal—3. Petal—4 Podocarp, ovary, style, stigma, and 4 stamens *in situ*—5. Ovary cut vertically—6. The same cut transversely—7. A nut full grown, with three aborted ones at the base—8. The same cut vertically—9. The seed dissected, showing the embryo *in situ—all more or less magnified.*

83. *Grewia ulmifolia.* Roxb. " Shrubby, scandent: leaves cuneate, oblong, serrate: umbellets terminal: petals linear, entire: receptacle cylindric, with a pentagonal base." Roxb. Fl. Ind. 2 page 591.

1. Flowering branch, *natural size*—2. A sepal—3. A petal—4. Pentagonal base, cylindrical podocarp, stamens *in situ*, ovary, style, and stigma—5. Ovary cut transversely, *all more or less magnified.*

84. *Grewia ulmifolia,* Roxb. *G. microcos*? Lin. " Shrubby, erect: leaves bifarious, broad lanceolate, serrate, acuminate: stipules simple: panicles terminal, petals retuse: drupe with a single bearded 3-celled nut." Roxb. Fl. Ind. 2 page 591.

Flowering branch, *natural size*—1. Sepal—2. Petal—3. Podocarp, stamens, ovary, style, and stigma—4. The latter more magnified, showing it 3-lobed at the apex—5. Ovary cut vertically—6. The same cut transversely—7. A full grown fruit—8. Drupe bearded—9. The same cut transversely—10. The seed dissected showing the embryo, *all more or less magnified.*

85. *Flacourtia Ramouchi*—1. Female—flowering branch, *natural size*—2. Female flower—3. A young fruit cut transversely—4. Male—flowering branch, *natural size.*

86. *Millettia piscidia* (*Galedupa piscidia* Roxb.) " Arborious, smooth: leaflets 3-5, lanceolate: the pairs opposite, racemes axillary and terminal, simple or ramous: filaments single and 9-cleft"—(calyx campanulate 5-lobed, flowers paired white).

1. Flowering branch, *natural size*—2. A dissected flower—3. A mature legume opened to show the abortion of part of the seeds—4. A seed.

87. *Dalbergia marginata,* Roxb. " Scandent, scabrous: leaflets 5-7 lanceolate, glossy, obtusely acuminate; panicle axillary, stamina 1 and 9; legumes sublinear, membrane margined, 1-seeded." Roxb.

1. A flowering branch with young legumes—2. A legume opened to show the solitary seed.

88. *Decaschistia trilobata,* R. W. Herbacious, tomentose: leaves deeply 3-lobed, slightly dentato--serrated on the margin; stipules subulate, longer than the petioles. " *Belgaum, towards the foot of the ghauts, flowering in October*"—J. Law, Esq.

I am indebted to Mr. Law, B. C. S for this, and two other, interesting new species figured in this number.

1. Flowering shoot, *natural size*—2. Staminal tube laid open—3. Anthers back and front views showing them 1-celled—4. Ovary, style, and stigmas, the calyx and involucrum opened and thrown back to bring them into view—5-6. Ovary cut vertically and transversely—7. A nearly mature fruit—8. The same cut vertically--9. The same cut transversely--10. A carpel opened to show the seed *in situ, all more or less magnified.*

89. *Grewia sclerophylla,* Roxb. MSS.--*G. scabrophylla,* Roxb. Fl. Ind.--*Obs.* I adopt the original name as it seems probable the other is a misprint.

" Shrubby, leaves round, cordate, serrate, rugose, above scabrous, underneath downy; peduncles axillary, 2-3 flowered; drupes round; nuts 4, 1-celled, 1-seeded." Roxb. Fl. Ind. 2 page 584.

1. Flowering branch--2. Ovary with stamens *in situ*--3. A sepal--4. A petal--5. Ovary cut vertically--6 The same divided transversely--7. A full grown fruit--8. The same cut transversely--9. Cut vertically, showing a nut *in situ*--10. A seed dissected to show the embryo.

90. *Naregamia alata,* the entire plant, a rather small specimen, *natural size*—2. A flower showing the petals and staminal tube—3. Calyx, ovary, style, and stigma—4. Anthers back and front views—5. The ovary cut transversely, showing its 3 cells and 2 collateral ovules in each—6. The same cut vertically—7. A ripe capsule, the 3 valves opened showing the seed *in situ*—8. A seed—9. The same cut transversely—10. Cut vertically, *all more or less magnified.*

MUNRONIA, R. W.

Calyx 5, rarely 4-cleft. Petals 5, cohering at the base, with the staminal tube. Anthers 10, attached to the apex of a slender funnel-shaped tube, alternate with its teeth, exserted. A tube sheathing the ovary and base of the style. Ovary 5-celled, cells 2-ovuled ranged round a thick central placenta. Ovules superposed. Style filiform, stigma discoid—capitate. Capsule 5-valved, valves septiferous, loculicidal. Seeds by abortion about 5, attached to a large pyramidal persistent placenta. Embryo enclosed in a thin fleshy albumen. Cotyledons foliaceous, radicle pointed remote from the hilum, projecting. Small erect shrubs, with the leaves congregated near the summit. Leaves pinnate; leaflets one or several pairs opposite, glabrous. Peduncles axillary, one or several flowered, flowers white, sometimes fragrant.

This genus which I have named in honor of my zealous and enterprising friend, Lieut. Munro, H. M. 39th Foot, is most nearly allied to *Naregamia*, but abundantly distinct and readily distinguished by its 5, not 3-celled ovary, and its superposed not collateral ovules. A more perfect account of the genus will be given under *Meliaceæ* in my Illustrations.

91. *Munronia pumila,* R. W. (*Melia pumila,* Moon's catalogue). Leaves 3 foliolate, the terminal one much larger.

1. Plant, a small specimen, *natural size*—2. A dissected flower, the sepals and petals removed, and the staminal tube laid open to show the sheath of the ovary—3. Pedicel, bracteæ and calyx—4. Petals and staminal tube removed to show the ovary—5. Ovary cut vertically—6. Cut transversely—7. Capsule burst, the lobes deflexed, showing the central placenta after the fall of the seed, *natural size*—8. The same magnified, showing more clearly the obcordate form of the valves—9. A seed—10. The same cut vertically showing the inverted embryo—11. Embryo removed. *With the exceptions mentioned, all more or less magnified.*

92. *Alysicarpus Belgaumensis*—Calyx deeply 4-cleft, upper segment bifid, joints of the legume compressed irregularly, reticulated, pubescent, leaves 3 foliolate—the terminal leaflet much the largest. *Rham ghaut,* Belgaum—Flowers in September—Communicated by J. S. Law, Esq. Bombay Civil Service.

1 Flowering extremity of the branch, *natural size*—2. A flower opened—3. The same, petals removed to show the calyx and stamens—4. Keel, and wing petals—5. Vexillum—6. Stamens—7. Anthers—8. Ovary split open to show the ovules—9. A legume, *natural size*—10. The same magnified—11. A seed.

93. *Atylosia Lawii,* R. W.—Shrubby, erect, tomentose, leaflets obovate about the length of the petiols; flowers axillary, solitary, drooping, peduncles shorter than the petiols, legumes short, 2-seeded, concealed within, the persistent corolla, pubescent.

A very distinct species, readily distinguished by its bushy habit and numerous short pedicelled yellow flowers.

Belgaum, on the top of the ghauts flowering in January.—Communicated along with the preceding and many other novelties, by J. S. Law, Esq. Bombay Civil Service, to whom I dedicate the species.

1. Flowering plant, *natural size*—2. A dissected flower—3. Anthers—4. The legume, the withered corolla by which it was concealed drawn aside—5. The same removed—6. A seed—*all more or less magnified.*

94. *Phasiolus trilobus*—1. Flowering branch, *natural size*--2. A dissected flower--3. Anthers--4. Ovary--5 Legume, *natural size*, opened to show the seed--6. A seed. *All with the exceptions mentioned, more or less magnified.*

95. *Sida acuta*—1. Flowering branch, *natural size*—2. Calyx, ovary, styles, and stigmas—3 Staminal tube laid open—4. Anthers—5. Ovary cut transversely—6. Capsule enclosed in the persistent calyx, *natural size*—7. The same, the calyx thrown back—8. The same cut transversely—9 Cut vertically—10. A seed. *With the exceptions mentioned, all more or less magnified.*

96. *Murraya exotica*—1. A flowering branch, *natural size*—2. A flower, petals removed to show the stamens, &c.—3. Ovary, style, and stigma—4. Anthers—5. Ovary cut vertically—6 Transversely—7. A full grown fruit, *natural size*—8. The same cut to show the position of the seed—9. A seed cut transversely. *All, except the fruit, more or less magnified.*

97. *Salacia oblonga*—(*Sethia by mistake*)—1. Flowering branch, *natural size*—2. A flower and bud—3. A dissected flower—4. The same, the sepals and petals removed, showing the dilated base of the filaments sheathing the ovary, and the 2-celled anthers—5. Ovary cut transversely, *all more or less magnified*—6. A full grown fruit--7. The same cut transversely--8. A seed, *all natural size.*

98. *Tribulus lanugenosus*—A small plant, *natural size*--1. A flower—2. The same, the petals removed to show more clearly the stamens, ovary and stigma—3. Anthers--4. Ovary, style, and stigma—5. The same cut transversely--6. Vertically--7. A mature fruit, *natural size*—8. The same cut transversely showing its 5 carpels—9. Cut vertically showing the 4 superposed seed of each carpel--10. A carpel removed--11. The same cut transversely just above the prickles--12. A seed removed--13 and 14. Different sections of the seed, *with the exceptions mentioned, all more or less magnified.*

99. *Zizyphus jujuba*--1. Flowering branch, *natural size*--2. An expanded flower seen from above--3. The same seen from below--4. Stamens--5 A stamen and petal--6. A young fruit cut transversely--7. The same cut vertically--8. A full grown fruit--9. A nut removed from the sarcocarp--10. A seed--11. The same cut transversely--12. The embryo removed, *all more or less magnified.*

100. *Eugenia Rottleriana*--1. A flowering branch, *natural size*--2. A dissected flower, *magnified.*

ERRATUM.

Plate 97, for *Sethia* read *Salacia.*

No. VI.

EXPLANATION OF PLATES.

101. Buchanania angustifolia, *natural size*—2. An expanded flower—3. The same, the petals removed to show the insertion of the stamens under the disk—4. Sepals, petals and stamens removed, the disk partially separated, and thrown back to show the fertile ovary and 4 sterile styles—5. Stamens—6. The ovary—7. The same cut vertically—8. The same cut transversely—*all more or less magnified.*

102. Garcinia pictoria, Roxb. *natural size*—2. The female flower the ovary removed to show the insertion of the stamens and union of the filaments near the base—3. Stamens detached—4. The same more highly magnified—5. The ovary detached—6. Cut vertically—7. Transversely—8. A full grown fruit—9. Cut transversely—10. A seed—11. Cut lengthwise—*all more or less magnified.*

103. Garcinia lanceæfolia, Roxb. *natural size*—2. A female flower. the ovary removed showing the stamens and petals—3. The ovary cut transversely, many celled—*both magnified*—4. A full grown fruit, *natural size.*

104. Garcinia Roxburgii, R. W. *(G. cowa Roxb.)*—1. Male plant—2. A portion of a male flower—3. An anther—4. Female branch—5. Fertile or female flower—6. Stamens, *both magnified*—7. A full grown fruit seen from below—8. The same from above—9. Cut transversely—10. A seed with its integument, and freed from it—*natural size.*

105. Garcinia cornea, Lin.—1. Male branch—2. Detached flower seen from below—3. A fasciculus of stamens seen from within, a detached anther magnified—4. The termination of a fertile branch with its solitary flower—5. Female flower seen from below—6. The ovary—7. A full grown fruit—8. The same cut transversely—with the exception of the anther, the figures of this plant do not seem to be magnified or but very slightly so.

106. Calophyllum decipiens, *natural size*—2. A flower-bud opened to show the petals, which seem to drop immediately on the natural expansion of the flower—3. The calyx and ovary after the fall of the petals and stamens—4. Anthers back and front views—5. The ovary somewhat further advanced—6. The same cut vertically, showing the solitary erect ovule—7. Cut transversely—*all more or less magnified*—8. A fruit, *natural size*—9. Cut transversely—10 Vertically showing the embryo—*magnified.*

107. Calophyllum Burmanni, R. W. var β parvifolium—*natural size*—2. An expanded flower—3. The sepals removed—4. Stamens showing the union of the filaments at the base—5. Anthers—6. The ovary *in situ* after the fall of the stamens—7. The same the petals removed—8. Cut vertically, to show the solitary erect ovule—9. Cut transversely—*all more or less magnified.*

108. Calophyllum Burmanni, α R. W. see 107 for explanations—7. A full grown fruit—8, 9, 10. Dissections of the same.

109. Lagerstrœmia microcarpa, R. W. *L. parviflora,* W. and A. *Prod.* page 308—2. A flower split open and spread out, to show the perigynous insertion of the petals and stamens—3. Anthers—4. Ovary, style and stigma—5. Cut transversely—6. Vertically—7. A mature fruit, *natural size*—the calyx as here represented is rather too short—8. A mature capsule bursting, showing the four valves—9. One of the valves separated with the seed attached—10. A seed—*with the exception mentioned, all more or less magnified.*

110. Calophyllum tomentosum, R. W. *natural size*—2. An expanded flower—3. The same, sepals and petals removed—4. Stamens and filaments cohering below—5. Anthers—6. Ovary—7. Cut vertically—8. Transversely—*all more or less magnified*—9. A portion of a young shoot magnified, to show the tomentum with which it is clothed.

111. Calophyllum Moonii, R. W. *natural size*—2. An expanded flower—3. The ovary and sepals—4. Stamens—5. Ovary cut vertically—6. Transversely.

112. Garcinia paniculata, Roxb.—1. Male plant portion of a branch with a panicle of flowers, *natural size.*—2. Male flower front view—3. Back view.—4. Detached stamens.—5. Female plant.—6. Female flower seen from above.—7. From below.—8. Detached ovary and stigma.—9. 10 full grown fruit seen from above and below.—11. Cut transversely.—12. A seed with its arillus.—13. The same the arillus removed.—14. Natural size of a fruit gathered from a wild plant in Silhet.

113. Garcinia Kydiana (Roxb. M. S. S.)—1. Male plant.—2. A male flower divided vertically showing the column of united filaments.—3. An anther showing its four angles and distinct polliniferous cells.—4. The same cut transversely.—5. A female branch.—6. A female flower divided vertically.—7. The same cut transversely.—8. A full grown fruit.—9. The same cut vertically showing a seed imbedded in pulp—10. Cut transversely several of the seed abortive. 11. A seed germinating.

114. Garcinia pedunculata, Roxb.—1. Female plant.—2. An expanded flower, the ovary removed, showing the union of the filaments near the base and the detached ovary.—3. A full grown fruit. 4. The same cut transversely.—5. A seed.

115. Garcinia pedunculata, (Roxb. 6.)—1. Male plant.—2. An expanded flower seen from below.—3. From above.—4. The column of stamens.—5. A detached anther.

116. Garcinia Mirguiensis, R. W.—1. Male plant, *natural size.*—2. An expanded flower seen from above.—3. The same from below showing the exterior pair of sepals much smaller than the interior. 4. Sepals and petals removed, the fasciculi of stamens drawn back to show their number and central sterile stigma.—5. The same parts in situ.—6. A fasciculus of stamens, one anther separated and more highly magnified.—7. The abortive pistil.—8. and 9. The same cut transversely and vertically, its cellular structure resembling ovules.—*All more or less magnified.*

117. Mesua Coromandelina, (R. W.)—I. A flowering branch, *natural size.*—2. A partially dissected flower, the sepals and petals removed to show the stamens and stigma.—3. Anthers.—4. Petals and stamens removed to show the ovary.—5. The ovary cut vertically, showing its 2 cells and erect ovules.—6. Cut transversely showing the 4 ovules.

118. Mesua ferrea—a flowering branch copied from a beautiful coloured drawing made by Mrs. Colonel Walker. The detached leaf is introduced to show the size and form of the larger leaves. It is an exact tracing.

119. Mesua pedunculata, R. W.—1. Flowering branch, *natural size*—2. The sepals and ovary—3. Anthers.—4. Ovary the sepals removed.—5. The same cut vertically.—6. Transversely, *all more or less magnified.*

120. Garcinia elliptica ? Wall.—I. Branch of the female plant in fruit.—2. A young fruit with its persistent sepals.—3. The same cut transversely showing its two cells.—4. Cut vertically showing the central attachment of the ovules.

121. Garcinia conicarpa, R.W.—1. Male plant natural size.—2. Male flower-bud.—3. The same opened—4. Petals removed to show the union of the filaments.—*All more or less magnified.*—6. Female plant, natural size.—7. Young fruit.—8. The same cut transversely.—9. Cut vertically.—*All slightly magnified.*

No. VII.

EXPLANATION OF PLATES.

The trees which respectively produce the Cinnamon and Cassia spices have, for a long series of years afforded matter for discussion and been a subject of controversy among Botanists. The question whether these barks were the produce of one or of several species having recently been referred to me by the Madras Government, I have been induced, in the present number of these Icones, to lay before the public figures of number of the species of the genus *Cinnamomum*, the younger branches of most, or perhaps all, of which, there is reason to believe, are peeled, as yielding an aromatic bark, more or less allied in its properties and flavour to that of the true Cinnamon and sold in the European markets under the name of Cinnamon or Cassia, according to its qualities.

The *Cinnamomum zeylanicum* of this series is, that which furnishes the true Ceylon Cinnamon, the *C. aromaticum* supplies the Chinese Cinnamon, which is but little, if at all less valuable, but is I believe, that which is considered among European druggists the genuine or first sort Cassia of commerce—nearly all the other species here figured, there is reason to believe, are indiscriminately peeled, and the bark sold as Cassia bark. The plant figured No. 132 (*Litsæa Zeylanica*) is the type of the Linnæan *Laurus Cassia*, with which he associated, the species figured in Nos. 130 and 141, both of which are now ascertained to be most distinct, but which he did not discover owing to his specimen not being in flower. This one error, which seems never before to have been traced to its source, gave rise to all the controversy which has at different times divided Botanists on this subject. For further details on this point I beg to refer to a short paper of mine published in the 9th volume page 130, of the *Madras Journal of Science*. To save unnecessary repetitions in explaining the plates I here subjoin the generic characters of the genus *Cinnamomum*, with such explanations as may be necessary to make them clearly understood.

Cinnamomum. Flowers bisexual or polygamous, calyx 6-cleft in a double series, the upper half of each segment separating from the cup-shaped tube. Stamens 12, in a quadruple series, the two outer rows fertile, opposite the segments of the calyx and opening inwards, the third row also fertile, opposite the outer series turned outwards and bearing on the filaments two glands, (staminodia) the 4th series sterile, opposite the second. Anthers ovate, 4-celled, opening by valves, the inferior cells larger, lateral, the sterile ones ovate, capitate. Ovary 1-celled, with one ovule. Stigma discoid. Berry 1-seeded, the base embraced by the enlarged 6-toothed persistent cup-shaped base of the calyx.—Indian trees yielding aromatic bark, the leaves nerved, approximated by pairs or opposite, flowers panicled or fascicled without involucra, the buds naked.

In some of the following dissections of the flowers of *Cinnamomum*, the four series of stamens are represented separately two and two, that is, the two outer rows are left attached to the segments of the calyx, while the inner ones which usually easily separate are represented distinct, by which means the staminodia, or glands, and sterile stamens are more clearly shown, and the confusion which might arise from bad printing, or otherwise, avoided. The following character of the genus *Litsæa* is copied from Professor Endlicher's most valuable Genera Plantarum. It is slightly modified from Nees' character of *Tetradenia*, a name pre-occupied for a genus of *Labiatæ*, and therefore inadmissible here.

Litsæa (Juss.) Flowers dioicous, the buds covered with scales. Male calyx 4-5, or 6 parted, deciduous. Male stamens 6, of which 4 or the two interior ones have two glands at the base. Anthers introrse, 4-celled, the 4 valves ascending.—Female—Stamens 4-6, thickened above opposite the segments of the calyx, 4 sessile glands surrounding the ovary, either approximated by pairs or attached to the 5 and 6th sterile filaments. Ovary 1-celled, 1-ovuled, style short; stigma discoid. Berry 1-seeded, naked, placed on a pedicel thickened at the apex.—Indian trees with alternate nerved leaves, flowers axillary, fascicled, flower-buds sessile, in pairs, or several densely imbricated with deciduous scales.

A reference to the figure No. 132, will render most of these characters sufficiently obvious; it being borne in mind that they vary somewhat in different species. It may however be remarked here that the drawing is made entirely from dry specimens, and on some points, owing to the minuteness and difficulty of displaying the parts of the flower, not quite so perfect as I could wish.

In the arrangement of my materials for this Number, I regret that more attention was not paid in the first instance, as, had that been done, a methodical in place of a chance distribution of the species might have been affected.

EXPLANATION OF PLATES.

122 & 122, *bis*. Cinnamomum iners. Nees.

1. Flowering branch, *natural size*—2. A flower—3 and 4. The same dissected—5. The inner series of stamens shown separately to prevent the confusion and difficulty in understanding the structure, which results when shown *in situ*—6. The ovary cut vertically, showing the solitary ovule—7. Cut transversely—8. A mature fruit, *natural size*—9. The same cut vertically—10. Transversely, *with the exceptions mentioned, all more or less magnified*.

The specimen represented in the first of these figures was communicated by Dr. Wallich from the Calcutta botanic garden. The one in fruit which was examined, and named by Professor Nees, is from Malabar.

123. Cinnamomum zeylanicum, *natural size*—2. A flower—3-4. The same dissected—5-6. The ovary cut vertically and transversely—7. A mature fruit—8-9. The same cut vertically and transversely—10. The embryo, *all more or less magnified*.

The specimen figured was gathered in the Cinnamon gardens of Columbo, this, though I apprehend not the finest variety, was adopted as coming from the best native station, in preference to others not raised in Ceylon.

124. Cinnamomum nitidum, *natural size*—2. A dissected flower—3. A stamen of the outer series—4. A sterile stamen—5. A stamen of the inner series with its glands—6. The ovary cut transversely—7. Vertically—8. A full grown fruit—9. The same cut vertically—10. The embryo, *all more or less magnified*.

Copied from Roxburgh's drawing.

125. Cinnamomum ovalifolium, (R. W.) Young branches quadrangular, and with the under surface of the leaves villous, leaves ovate, obtuse, panicles axillary, shorter than the leaves, few flowered.

Hab: *Woods, Ceylon*.

1. Flowering branch, *natural size*—2-3. A dissected flower—4-5. Ovary cut vertically and transversely—6. A portion of a leaf magnified to show the villi—*all more or less magnified*.

Specimens communicated by Colonel Walker.

126. Cinnamomum multiflorum, β R. W.

1. Flowering branch, *natural size*—2-3. The flower dissected—4-5. The ovary cut transversely and vertically, *more or less magnified*.

The specimen was received from Ceylon, and though apparently the same species differs sufficiently from Roxburgh's plants No. 131, to entitle it to rank as a distinct variety.

127. Cinnamon villosum, (R. W.) All the younger parts of the plant clothed with soft villous pubescence: branches terete, leaves ovate, lanceolate, acute, panicles stalked, diffuse, about the length of the leaves.

Hab: *Ceylon in woods*.

This species seems closely allied to the true Cinnamon, and may be the *C. perpetuo florens* of Burman, though that appears doubtful. It is principally distinguished by its pubescence.

1. Flowering branch, *natural size*—2-3. A dissected flower—4-5. Ovary cut vertically and transversely—6-7. Portions of a leaf magnified to show the pubescence on both sides—*all more or less magnified*.

128. Laurus cassia, Bot. Mag. 1636. This in the estimation of Nees von Esenbeck is a variety of the true Cinnamon plant, an opinion in which after repeated comparisons with both growing plants and dried specimens, I cannot coincide, though I am unable to say to what species it is referable.

Copied from the Botanical Magazine.

129. Laurus cinnamomum, Bot. Mag. 2028. This I at first considered a variety of the former, and on that supposition have doubtfully named it *C. zeylanicum*, a more careful examination has led me to alter my opinion, and now I think it a variety of 136, *C. aromaticum*, Nees.

This like the preceding is copied from the Botanical Magazine.

130. Cinnamomum iners. *Carua*—Rheede, Hort. Mal. This like 128 is quoted by Nees as a variety of *C. zeylanicum*, but in my opinion is much more correctly referable to *C. iners*. This is one of the plants quoted by Linnæus as his *Laurus cassia*. It is totally different from the Ceylon plant which he had before him (No. 132) and described in the Flora zeylanica.

This figure is copied from Rheede's Hort. Mal.

131. Cinnamomum multiflorum, Nees—*Laurus multiflora*, Roxb. *natural size*—2-3. A dissected flower.

This figure is copied from Roxburgh's drawing, a native of Ceylon.

132. Litsæa zeylanica, Nees—*Tetradenia zeylanica*, Nees—*Laurus cassia*, Lin. *natural size*—2. A flower-bud unopened—3. The same, the involucrum opened and spread out to show the enclosed flowers *in situ*—4. The involucrum with the flowers in a very early stage—5. A flower unopened—6. The same opened—7. The glanduliferous stamens back and front views—8. Stamens of the outer series back and front views—9. The ovary—10-11. The same cut vertically and transversely—12. A mature fruit, *natural size*—13. The seed—14-15. The seed cut vertically and transversely, the former showing the embryo *in situ*—*with the exceptions mentioned, all more or less magnified*.

The flowers of the fertile plant of this species are, it appears, bisexual.

The specimen figured is from Ceylon.

133. Cinnamomum? recurvatum. *Laurus recurvata*, Roxb.—2. A dissected flower—3. A sterile stamen.

Copied from Roxburgh's drawing—I do not find this species in Nees' enumeration of Indian Laurinæ, and not being in fruit I am not sure that it is a species of Cinnamomum, hence the mark of doubt.

134. Cinnamomum zeylanicum, γ Nees. *natural size*—2-3. A dissected flower—4-5. Ovary cut vertically and transversely.

The specimen from which the drawing was made was communicated, along with many more Ceylon Laurinæ, by Colonel Walker. The branches and leaves are glabrous, the flowers somewhat hairy, fruit I have not seen. This it appears to me is identical with Burman's *Cin: perpetuo florens*—and certainly a variety of C. zeylanicum.

135. Cinnamomum dubium, Nees.—The analysis as in the preceding. The specimen from which this figure is taken was compared with one in my herbarium, named as above by Professor Nees, and found accurately to correspond. One of the magnified flowers in the upper corners is taken from the specimen named by Nees.

Hab: *Ceylon*.

136. Cinnamomum aromaticum, Nees. Copied from the Botanical Repository, No. 596.

This figure is quoted by Nees as a correct representation of his *C. aromaticum*; the species which yields the China Cinnamon, or first sort Cassia of the European market.

137. Cinnamomum Culitlawan, Nees—*Laurus Culilaban*, Roxb. This figure is copied from Roxburgh's drawing.

138. Cinnamomum dulce, Nees—*Laurus dulcis*, Roxb. *natural size*—2. A dissected flower—3. Sterile stamen—4. Fruit.

Copied from Roxburgh's figure.

139. Cinnamomum obtusifolium, Nees—*Laurus obtusifolia*, Roxb. *natural size*—2. A dissected flower—3. Glanduliferous stamen—4. A separate gland—5. A berry—6. The same cut vertically—7. The embryo?

Copied from Roxburgh's figure.

140. Cinnamomum albiflorum, (Wall.) *Laurus cassia*, Roxb. *natural size*—2. A dissected flower—3. Detached fertile stamens—4. A sterile stamen—5. A berry—6-7. Cut vertically and transversely.

Copied from Roxburgh's drawing.

141. Cinnamomum perpetuo florens, Burm.—Copied from Burman's Thesaurus Zeylanicus.

No. VIII.

EXPLANATION OF PLATES.

142. Loranthus memecylifolius—*natural size.*
2. A flower split open, showing the attachment of the stamens to the corolla—3. Ovary, style and stigma.

143. Loranthus Wallichianus—*natural size.*
2. Corolla laid open—showing the attachment of the stamens—3. Anthers back and front views—4. Ovary—5-6. The same cut transversely and vertically.

The specimen from which this drawing was made was collected on the Neilgherries, and communicated by Lieut. Munro.

144. Vitis adnata, flowering branch—*natural size.*
2. An expanded flower—3-4. The ovary cut transversely and vertically—5. A full grown berry—6-7. The same cut transversely and vertically.

Copied from Roxburgh's drawing.

145. Vitis auriculata, flowering branch—*natural size.*
2-3. The ovary cut transversely and vertically—4. A full grown berry—5. The same cut vertically—6. Cut transversely—7. A seed—8. The same cut vertically, to show the embryo—9. The embryo removed.

Copied from Roxburgh's drawing.

146. Guaria paniculata, *Roxb.*—(Disoxylum paniculatum, Arn.)
2. A dissected flower—3. The stamen tube split open—4. An anther—5-6. The ovary cut transversely and vertically—7. A full grown capsule—8 The same opened, showing two cells with their contained seed—9. Back and front views of the seed—" Seed solitary, round or oval, considerably flattened, interior half yellow, in the middle of which is a large whitish flat umbilicus; exterior half of a smooth shining chesnut colour, across which is a trifling marking, the separation of the transverse cotyledons." Roxb. Fl. Ind.

Copied and somewhat reduced from Roxburgh's drawing.

147. Careya sphærica, *Roxb.* A flowering branch—*natural size.*
2. A portion of the stameniferous ring, showing the three sets of filaments, the inner series short, the middle longer and fertile, the outer longest and sterile—3. The ovary with its bractea detached—4. The ovary cut transversely, 4-celled—5. The same cut vertically—6. A full grown fruit—7. A transverse section of the same—8. A seed—9. The same cut transversely, showing the large albumen and central embryo—10. A seed germinating.

Copied from Roxburgh's drawing.

This genus is referred by most Botanists to *Myrtaceæ* § *Barringtonieæ*, but no character by which the sub-order may be distinguished is assigned, except its alternate leaves without semi-transparent dots. Mr. W. Griffith in a letter, hints, I think, (I have not now the letter at hand to ascertain) that both this and *Sonneratia* are more properly referable to *Lythrariæ*. I am not sure about the latter but I think that the remarkable conformation of the seed affords sufficient reason for removing both this and *Barringtonia*, from both *Myrtaceæ* and *Lythrariæ*, to form a distinct order approaching *Guttiferæ* in the character of their seed.

148. Pavetta indica—*natural size.*
2. A flower magnified—3. A full grown fruit—4. The same cut transversely—5. The embryo.—Copied from Roxburgh's drawing.

149. Ixora Bandhuca, Roxb.—*natural size.*
2. The fruit—3. A fruit cut transversely—4. Vertically—5. The seed cut vertically, showing the embryo—6-7. Ovary cut transversely and vertically.

Copied from Roxburgh's drawing.

150. Ixora villosa, Roxb.—*natural size.*
2. A dissected flower—3-4. Ovary cut vertically and transversely—5. A fruit—6. The same cut transversely—7. The embryo removed from the seed.

Copied from Roxburgh's drawing.

151. Ixora fulgens, Roxb.—*natural size.*
2. Ovary and style—3. A fruit full grown—4. The same cut transversely—5. Vertically—6. The embryo removed.

152. Barringtonia racemosa, Roxb.—*natural size.*
2. Ovary cut vertically—3. Transversely—4. A full grown fruit—*natural size*—5. The same after germination has commenced.

Copied from Roxburgh's drawing.

For some remarks on the natural order of this genus, see No. 147.

153. Ixora coccinia, Linn.—*natural size.*
2. A flower magnified—3. A fruit—4. The same cut transversely—5. A seed—6. Cut transversely—7. Vertically, showing the embryo *in situ.*

Copied from Roxburgh's drawing,

154. Abelmoschus ficulneus.
2. The fruit cut transversely.

155. Pleurostylia Wightii—*natural size.*
2. An expanded flower seen from above—3. Side view of the same—4. The ovary 1-celled, cut transversely above the discoid torus—5. A mature fruit—6. The same cut vertically, showing the seed and position of the embryo *in situ*—7. A seed removed from the capsule, showing the crustaceous aril-like testa split at the base—8. The same, the testa removed, so as to bring the globose seed into full view—9. The seed—10. The same cut transversely, showing the albumen and embryo—11. The embryo *in situ*—12. The same separated from the seed—*all more or less magnified.*

156. Ipomæa pulchilla—*natural size.*
2. Calyx, ovary, style and stigma—3. Tube of the corolla split open, to show the insertion of the filaments—4. A fruit cut transversely—*all more or less magnified.*

157. Ipomæa chrysoides.
2. Calyx, ovary, style and stigma—3. Corolla removed and split open, to show the attachment of the filaments, but owing to injudicious shading badly represented—4. A fruit cut transversely—*all more or less magnified.*

158. Celastrus paniculata.
2. An expanded flower seen from above—3. The same seen from below.

For further illustration of this species see Illustrations of Indian Botany, No. 72.

159. Rhamnus Wightii—*natural size.*
2. An expanded flower, showing the minute scale-like petals opposite the stamens—3. A fruit cut transversely, 3-celled, with one seed in each cell.

160. Melea Azedarach—*natural size.*
2. An expanded flower—3. The stamen tube split open, showing the position of the anthers, style, and lobed stigma—4. A full grown fruit—5. The same cut transversely, showing it a 5-celled drupe, with a solitary seed in each cell—6. The nut removed from its pulpy covering.

161. Cedrela Toona—*natural size.*
2. An expanded flower—3. The same, the corolla removed, showing the filaments free above united beneath, forming a cup round the base of the ovary—4. The ovary cut transversely, 5-celled, with two rows of ovules in each cell.

No. IX.

EXPLANATION OF PLATES.

Lophopetalum, (R. W.)

Gen. Char. Calyx obsoletely 5-lobed. Petals 5, orbicular, furnished near the base with a crest. Torus a large fleshy 5-lobed disk, covering the bottom of the calyx, the lobes covering, and cohering with the claws of the petals. Stamens 5, inserted into the disk, filaments persistent. Anthers oval, oblong, versatile, bursting their whole length. Ovary not immersed in the disk, triangular, 3-celled, with a double row of compressed imbricated ovules in each. Style short, thick furrowed, stigma obtruse. Fruit ?

Shrubs, with opposite, coriaceous, ovate, acuminate, glabrous leaves, large axillary corymbs, and redish purple flowers.

This genus is intermediate between *Celastrus* and *Euonymus*, but more nearly related to the latter than the former. Dr. Arnott, I think, considers Wallich's *Euonymus grandiflorus*, another species of this genus, an opinion in which I cannot yet coincide, though it seems probable Wallich's plant forms the type of a genus distinct from *Euonymus*.

162. Lophopetalum Wightianum—1. Flowering specimen—*natural size*—2. A flower—3. Ovary cut vertically, showing the double row of ovules—4. Cut transversely, showing its triangular form and 3 cells—5. A detached ovule—*all more or less magnified.*

163. Ventilago madraspatana—Flowering branch—*natural size*—2. Side view of an expanded flower—3. Front view of the same, showing the stamens opposite the scale-like petals—4. Stamens—5. A transverse section of the ovary, showing it 2-celled, with a solitary ovule in each—6. A vertical section of the flower, ovary immersed in the disk—7. A full grown fruit—*natural size*—8. Fruit cut vertically, showing the solitary seed and ascending wing—9. A fruit cut transversely, 1-celled and 1-seeded—*natural size*—10. An entire seed—11. Seed lobes separated, showing the embryo at the base—*with the exceptions mentioned, all more or less magnified.*

164. Vatica laccifera—A flowering branch—*natural size*—2. Corolla detached and split open, to show the stamens adhering to its base—3 and 4. Stamens—5. Ovary cut transversely, 3-celled, with 2 ovules in each—6. Ovary, style, and stigma, *in situ*—7. Ovary cut vertically, showing the central attachment of the ovules—8. A full grown capsule, with the sepals enlarged into 5 long wings—9. Corolla enclosing the ovary, sepals removed—10. A fruit cut vertically—11. Cut transversely—12. A detached seed—13. A seed lobe expanded to show its form, but inverted by the mistake of the artist—*all more or less magnified.*

I am indebted to Mr. Apothecary Bertie, with the exception, of some of the dissections, for the very well executed drawing from which this figure is copied, and have much pleasure in thus publicly proffering my thanks, for this and several other favours of the same kind, to that very meritorious officer.

165. Shutera vestita—A flowering branch—*natural size*—2. A dissected flower—3. Back and front views of the stamens—4. An immature legume laid open, showing its numerous ovules—5 A young seed—*natural size*—6. The same magnified.

Obs.—This may prove a new species, but owing to the great similarity existing between the only two described peninsular species I preferred for the present associating it with the one to which I thought it most nearly approached—though it does not altogether correspond with the character.

166. Milnea Roxburghii—Flowering branch, and a detached panicle of fruit—*natural size*—2. An expanded flower, showing the globose stameniferous urceolus—3. The urceolus split open, to show the attachment of the filaments within—4. The ovary surrounded by the subpersistent calyx—5. A full grown fruit cut transversely, 2-celled, with 1 seed in each—*all more or less magnified.*

167. Glycosmis triphylla—*natural size*—2. A flower split open, to show the stamens and ovary—3. A young fruit cut transversely, 5-celled, showing its short pedicel and discoid glandular torus—4. A mature fruit cut transversely, 1-seeded, the remaining ovules aborted—5. The seed removed all slightly magnified.

Obs.—This drawing was prepared many years ago, and the analysis are less perfect than they should be.

168. Glycine labialis—A branch in flower and fruit—*natural size*—2. A detached flower—3. The same dissected and the petals shown separately—4. Calyx split open, to show the ovary and united filaments—5. Anthers back and front views—6. Stamens, the filaments all united at the base—7. The ovary split open—8. A portion of a full grown pod with the seed *in situ*—9. Valves of the legume spirally twisted after dehiscence—10. A seed cut vertically—11. The same cut transversely—12. Seed lobes and incurved radicle—13-14. Portions of a leaf showing the hairs—*all more or less magnified.*

169. Ipomæa sessiliflora—Leaves cordate, acuminated, hairy; flowers aggregated, small, not involucred; peduncles very short; capsules moderate sized.

1. Flowering branch—*natural size*—2. Corolla split open, showing the insertion of the stamens—3. Calyx, ovary and style, and capitate stigma—4. Capsule cut transversely—5. Embryo foliaceous removed from the seed.

170. Vitis setosa—Flowering branch—*natural size*—2. An expanded flower, petals reflexed—3 The same at the commencement of expansion—4. The petals removed, showing the truncate calyx, and 4-lobed gland-like disk, with a single detached petal—5. Stamens back and front views—6. The ovary cut vertically—7. Cut transversely, with a front view of the disk—8. A berry cut transversely, one seeded by abortion—*all more or less magnified.*

Obs.—The analysis are partly made from dry specimens, the figure is from a recent one.

171. Vitis carnosa—Flowering branch—*natural size*—2. An expanded flower—3. The petals removed to show the disk—4. A full grown fruit cut transversely—*all more or less magnified.*

172. Terminalia Catappa—A flowering branch—2. A detached flower—3. The calyx split open, showing the stamens and inferior ovary—4. Stamens back and front views—5. Ovary cut vertically, ovules pendulous—6. Transverse section of the same, ovules paired—7. A full grown fruit—8. The same cut transversely, seed solitary—9. Seed detached—10. The same cut transversely—11. Testa removed to show the spirally convolute cotyledons—*all more or less magnified.*

173. Capparis horrida—Flowering branch—2. Anthers back and front views—3. Ovary—4. The same cut vertically—5. Cut transversely—6. A full grown fruit—*natural size*—7. The same cut transversely—8. A seed—*natural size*—9 The same cut vertically—10. The embryo removed, *with the exceptions mentioned, all more or less magnified.*

174. Niebuhria linearis—Flowering branch—*natural size*—2. A flower, the calyx split open, showing the cylindrical torus and insertion of the stamens—3. Anthers back and front views—4. Ovary cut vertically—5. The same cut transversely—6. An immature berry cut transversely, showing the parietal attachment of the seed—7. A seed—8. The same cut transversely, showing the twisted cotyledons—9. The seed, the testa removed—10. Cut vertically—11. Cotyledons opened out, showing the ascending direction of the radicle—*all more or less magnified.*

175. Limonia missionis, (L. citrifolia! Moon's cat. Ceyl. Pl. not Roxb.)—Flowering branch—*natural size*—2. An expanded flower—3. Anthers back and front views—4. Ovary cut vertically, showing the attachment of the ovules—5. The same cut transversely, 4-celled, with two collateral ovules in each—6. Another instance showing an occasional variation, 5-celled—7. An immature ovule—8. A fruit near maturity cut transversely—9. A seed—10. The same cut transversely—11. Seed, the testa removed—12. A seed lobe, showing the inner surface covered with pellucid dots—*all more or less magnified.*

Obs.—This is certainly Moon's plant the original specimen of which I have seen—Roxburgh's L. citrifolia appears to be a species of my Paramignya, hence this plant ought perhaps to bear Moon's name.

176. Vitis angustifolia *Roxb.* dioicous. Leaves ternate, leaflets, lanceolate, serrate, glabrous; stipules ovate, acute, cymes shorter than the petioles. Berries spherical, 1-2 seeded—*Roxb.*

1-1. Flowering branch male and female—2-2. Male and female flowers—3. A berry—4. The same cut transversely—5. A seed cut vertically, showing the embryo *in situ*—6. The embryo removed, *all magnified.* Copied from Roxburgh's drawing.

177. Vitis lanceolaria—Flowering branch—*natural size*—2. An expanded flower. From Roxburgh's drawing.

178. Nymphœa stellata—Plant—*natural size*—2. Stamens and ovary front view—3. Ovary cut transversely, many-celled—4. Cut vertically, seed very numerous—5. A single seed—*slightly magnified.*

179. Modecca Wightiana—Plant—*natural size*—2. A female flower dissected, showing the small included petals, the sterile filaments and the superior ovary—3. A seed with its arillus—one of the fruit cut transversely, shows the parietal attachment of the seed.

180. Helicteres Isora—A flowering branch—*natural size*—2. A dissected flower, the filaments united forming a tube round the podocarp—3. Capsule, carpels spirally twisted—4. Capsule cut transversely, 5-celled, many seeded—5. A seed—*all more or less magnified.*

181. Streculia fœtida—A flowering branch—*natural size*—2. A dissected flower, the calyx split open, showing glands in the place of the petals, and the stalked ovary surrounded by the stamens—3. The ovary—4. Cut vertically, ovules numerous—5. The same cut transversely, showing the 5 cells with two rows of ovules in each—6. A single carpel, five of which go to form the entire fruit—7. A seed cut lengthwise—8. Cut transversely—9. Embryo removed—*all more or less magnified.*

No. X.

EXPLANATION OF PLATES.

182. Diospyros tomentosa, Roxb. ♂ " Diœcous, all the tender parts very downy: leaves opposite and alternate, oval, entire: male—peduncles 3-flowered, calyx and corolla gibbous, 4-toothed: stamens 12, on a receptacle: female—solitary with the calyx and corolla, 5-parted: berry as far as 5-seeded." Roxb.
1. Flowering branch—2. A flower dissected and corolla removed to show the stamens—3. Corolla split open—*Copied from Roxburgh's figure.*

183. Diospyros tomentosa, Roxb. ♀—1. Flowering branch—2. A flower dissected, corolla removed and calyx split open to show the ovary—3. Corolla—4-5. Full grown fruit seen in different positions to show the enlarged calyx—6. Fruit cut transversely—*Copied from Roxburgh's figure.*

184. Ixora stricta, Roxb. " Shrubby, straight: leaves subsessile, oblong: corymbs dense, compound hemispheric: laciniæ of the corolla round spreading: anthers bristle pointed." Roxb.
1. Flowering branch—2. A corolla split open, to show the inferior ovary, style and stigma—3. A fruit—4. The same cut transversely—*Copied from Roxburgh's drawing.*

185. Ixora barbata, Roxb. " Tube of the corolla long: mouth bearded: leaves opposite, short petioled, oblong, entire, smooth, shining; floral leaves, round, cordate, sessile: panicles open." Roxb.
1. Flowering branch—2. A flower, the corolla split open—3. A fruit—4. The same cut transversely—*Copied from Roxburgh's drawing.*

186. Ixora (Pavetta Sm.) tomentosa, Roxb. " Shrubby: leaves oblong, ventricose, entire, tomentose: panicles lax, sub-globular, tomentose: style twice the length of the corol: stigma entire: berries globular."
Obs.—This is a species of *Pavetta,* which is distinguished from *Ixora* by the length of the style.
1. A flowering branch—2. The flower showing the style and stigma twice the length of the corolla—3. A fruit—4. The same cut transversely—*Copied from Roxburgh's drawing.*

187. Rubia Mungista, Roxb. " Perennial, scandent: leaves fourfold, long-petioled, cordate, acute from 5 to 7 nerved, hispid: corol flat, 5-parted, pentandrous." Roxb.
1. Flowering branch—2-3. Flowers seen from above and from below—4. Stigma side and front views—5. Fruit cut transversely—6. A seed—7. The same cut to show the embryo—*Copied from Roxburgh's drawing.*

188. Diospyros Ebenum, Kön. " Leaves short petioled, alternate, bifarious, oblong, entire, polished: male flowers sub-racemed, with about 2d anthers: hermaphrodite, solitary, octandrous; style single: stigma 4-cleft." Roxb.
1. Male—flowering branch—2. Receptacle and calyx—3. Corolla and stamens—4. Detached stamens—5. Female, flowering branch—6. Dissected flower, calyx, ovary, and cleft stigma—7. Corolla with attached stamens—8. A full grown fruit—9. The same cut transversely—10. The same seen from above umbilicate—11. A seed—12. The same cut transversely—*Copied from Roxburgh's drawing.*

189. Diospyros ramiflora, Roxb. " Arboreous, leaves lanceolate, glossy: hermaphrodite and male flowers in fascicles from the large woody branches: calyx and corol from 5 to 6-parted, style from 5 to 6-cleft, berry with 10 or 20 seeds." Roxb.
1. A flowering branch with 2 fascicles of flowers—2. A younger branch and leaves—3. Calyx and ovary—4. Corolla and stamens—5. A full grown fruit seen from below—6. Seen from above—7. Cut transversely—8. A seed—*Copied from Roxbnrgh's drawing.*

190. Rhopala excelsa, Roxb. " Leaves alternate, short petioled, cuneate-oblong, obtuse, pointed smooth, with a few large blunt serratures near the apex: racemes axillary and terminal, as long as the leaves, downy: nectaral scales 4, distinct and naked." Roxb.
1. Flowering branch—2. Flowers, one dissected to show the nectaral scales and insertion of the stamens into the petals—3. Ovary, style and stigma removed—4. Ovary cut vertically—5. The same divided transversely—*Copied from Roxburgh's drawing.*

191. Rhopala robusta, Roxb. " Leaves alternate, sessile, cuneate, oblong, remotely serrulate: racemes axillary, and below the leaves smooth: nectary a smooth 4-toothed cup." Roxb.
1. Flowering branch—2. A dissected flower, showing the ovary *in situ*, embraced by the nectarial cup—3. The ovary cut vertically—4. The same cut transversely, showing the two collateral ovules—*Copied from Roxburgh's drawing.*

192. Xanthochymus dulcis, Roxb. " Polygamous leaves, opposite, oblong: flowers fascicled, lateral: corols globular: fruit oval, obtuse, from one to 5-seeded." Roxb.
1. Flowering branch—2. A hermaphrodite fertile flower—3. A male one—4. A fascicle of stamens—5. An anther—6. The ovary detached, stigma radiate—7. The same cut vertically—8. Cut transversely—9. A full grown fruit—10. The same cut vertically and transversely—11. A germinating seed—12. The same cut longitudinally, showing the embryo traversing the albumen—*Copied from Roxburgh's drawing.*

193. Spermacoce lævis, Roxb. " Biennial, straight, round, smooth: leaves subsessile, lanceolar, corymbs terminal, anthers hid in the bearded mouth of the infundibuliform corol." Roxb.
1. Flowering branch—2. A corolla split open, glabrous within—3. Ovary, calyx, style and stigma—4-5. Ovary cut transversely and vertically—6. The mature fruit enclosed in the calyx—7. The same cut transversely, 2-seeded—*Copied from Roxburgh's figure.*

194. Alangum decapetalum. " Leaves narrow, oblong, sometimes shortly and bluntly acuminated: petals 6-10." W. and A. Prod.
1. A flowering branch—2. Ovary, calyx, style and stigma, after the fall of the petals and stamens—3. An anther—4. A fruit cut transversely.

195. Terminalia tomentosa, W. and A. *Pentaptera, Roxb. D. C. and Wall.* " Back deeply cracked, leaves nearly opposite, linear, oblong, obtuse, somewhat cordate at the base, crenulate, pubescent, but finally glabrous above, tomentose or pubescent beneath, with some thick stalked turbinate glands on the midrib near the base—fruit glabrous." W. and A. Prod.
1. Flowering branch—2. A flower side view—3. The same seen from above—4. Calyx and ovary cut vertically, ovary with two pendulous ovules, calyx clothed within with hair—5. Ovary cut transversely, 1-celled, with two collateral ovules—6. A full grown fruit—7. Cut transversely, *both natural size.*

196. Pterolobium lacerans, Brown. " Shrubby, scandent, pinnæ 4-8 pair; leaflets 4-8 pair, oval, obtuse, or emarginate: petiols with usually 2-recurved prickles on the under side between each pair of pinnæ and one incurved one on the upper: racemes lax in the axils of the upper leaves, pedicels slender." W. and A. Prod.
1. Flowering branch—3. A flower—3. A stamen—4. Anthers—5. Ovary, style, stigma and a petal—6. Ovary cut vertically, 1-celled, with one pendulous ovule—7. A full grown legume with its wing—8. The same cut vertically, the shrivelled ovule showing that the seed has aborted though the legume has continued to grow—*all more or less magnified.*

197. Hibiscus surattensis, Linn. " Stem herbaceous, and as well as the petiols and pedicels rough with small recurved prickles: stipules half cordate, broad, foliaceous: leaves palmately 3-5-lobed, on long petiols, pedicels elongated, shorter than the petiols: leaves of the involucel linear, incurved, furnished on their back about the middle with an oblong, foliaceous, spreading appendage." W. and A. Prod.
1. A flowering branch—2. Column of stamens and ovary, style and stigma, separated, to show that the column is formed by the union of the filaments into a tube—3. Anthers 1-celled—4. A stigma—5. Ovary *in situ*, the calyx and involucel opened and turned back—6-7. Ovary cut vertically and transversely—8. A full grown fruit surrounded by the calyx—9. The same detached—10. Two valves separated, showing the seed *in situ*—11. A detached seed—12. The same, the testa partly removed to show the position of the radicle and cotyledons—18. Embryo-foliaceous, cotyledons and radicle—*all more or less magnified.*

198. Inga dulcis, (Willd.) Arboreous, extreme branches pendulous, armed with short straight stipulary thorns: leaves bigeminate, (pinnæ and leaflets each one pair) leaflets oblong, very unequal-sided, obtuse, with a gland between the pinnæ and between the pairs of leaflets, petiols shorter than the leaflets; flowers capitate; heads shortly peduncled, racemose, the racemes panicled, legumes large, twisted, seeds glabrous and smooth, imbedded in a firm pulp.
1. Flowering branch—*natural size*—2. A flower—3. The same split open, showing the pedicelled ovary—4. Ovary detached—5-6. Ovary cut transversely and longitudinally—7. A full grown legume much twisted—8. The seed pulp with the seed enclosed—9. The pulp opened to show the seed *in situ*—10. A seed—11. Cut transversely—12. The lobes separated, showing the radicle and plumule at the small end—13. The radicle detached—*all more or less magnified.*

199. Rothia trifoliata, Pers.—1. A plant—*natural size*—2. A detached flower—3. The same, the petals removed showing the stamens monadelphous—4. Anthers—5. The ovary cut longitudinally—6. Petals detached and separately represented—7. A pod laid open, showing the seed—8. A detached seed—9. The testa partially removed to show the position of the radicle—10. Cotyledons and radicle—*all more or less magnified.*

200. Crotolaria verrucosa, Linn. " Herbaceous, erect, much branched, young parts minutely pubescent, stalks and racemes acutely 8-4 angled: stipules cunate, transverse, recurved: leaves ovate, suddenly and shortly acuminated at the base, at length nearly quite glabrous on both sides: racemes terminal, and leaf opposed, many-flowered: bracteas small, subulate, reflexed: pedicels rather shorter than the calyx, bracteoles very minute, setaceous about the middle of the pedicel: calyx smaller than the corolla, slightly pubescent, legume cylindrical, oblong, sessile, softly pubescent, many-seeded." W. and A. Prod.
1. Flowering branch—*natural size*—2. A dissected flower—3. The ovary cut longitudinally—4. A nearly mature pod opened—5. A seed—6. The same cut transversely—*all more or less magnified.*

201. Modecca palmata. " Leaves from cordate acuminated, (on young plants) to palmately 3-5 lobed, glabrous, with two flat glands at the base and one below, each sinus between the lobes: stipules hardening and horn-like: male and female flowers both with 5 short abortive filaments, placed within the gibbosities of the calyx tube, capsule globular." W. and A. Prod.
1. Flowering branch (female)—2. A male flower—3-4. The stamens, filaments united below into a conical tube with an abortive ovary in the centre—5. An anther—6. Calyx (female) laid open, showing the hairy linear ciliated petals and abortive filaments—7. The same *in situ*, calyx open to show the ovary—8. An abortive filament—9. Ovary split open—10. A fruit after dehiscence—11. A seed enclosed in its arillus—12. Seed detached—13. Cut vertically, showing the embryo enclosed in its albumen—14. The same cut vertically, showing the embryo *in situ*—15. Embryo removed—*all more or less magnified.*

No. XI.

EXPLANATION OF PLATES.

202. *Phaseolus Pulniensis*, R. W. Root tuberous: stems procumbent diffuse, and with the leaves and elongated peduncles hairy: leaflets ovate, lanceolate, acute: stipules small, lanceolate, attached by the base: peduncles very long, ascending, curved, one-flowered: flowers large: legume cylindrical, somewhat clavate, tapering towards the point, hairy.

Hab.—*Pulney mountains, creeping among long grass at an elevation of about* 6000 *feet*

1. Plant, *natural size*—2. A dissected flower—3. Ovary divided lengthwise, showing the ovules—4. Legume, *natural size*—5. A portion opened to show the seed *in situ—natural size*—6. A seed—7. The same cut transversely—8. The same cut vertically—9. Cotyledons and radicle, testa removed—*with the exceptions mentioned, all more or less magnified.*

203. *Lablab vulgaris.* Legume broadly scimitar shaped, gibbous below the apex, and ending abruptly in a straight or recurved cuspidate point, seeds longitudinally oval.

1. Flowering plant, *natural size*—2. A dissected flower—3. A legume, *natural size*—4. Portion of the same opened to show the seed—5. A seed, *natural size*—6. The same, the testa partially removed.

204. *Zanthoxylon triphyllum*, Juss. Unarmed: leaves opposite, palmately 3-foliolate; leaflets oval, oblong, acuminated, somewhat unequal-sided at the base, glabrous: peduncles axillary, longer than the petiols, corymbs large, spreading, flowers numerous, minute: carpels 1-4, spreading, 1-seeded; seed globose, glossy black.

1. Flowering branch, *natural size*—2. A male flower, petals removed to show the stamens and sterile ovary—3. Fertile flower, petals removed, one shown separately—4. Stamens—5. Ovary cut vertically—6. Transversely—7. A carpel burst, showing the enclosed seed, *natural size*—8. A seed removed—9. Seed cut transversely, embryo enclosed in albumen—10 Embryo detached—*with the exceptions mentioned, all more or less magnified.*

205. *Monocera ferruginea*, R. W. Arboreous: leaves coriaceous, oval, acute, at first villous, afterwards glabrous above, tomentose, rusty coloured beneath, oval, acute at both ends: racemes axillary, shorter than the leaves, many-flowered, flowers drooping, and with the rachis clothed with rusty tomentum: sepals lanceolate: petals involute on the margin, many-toothed, anthers glabrous, bristle straight, drupe oval.

Neilgherries.—Messrs. Munro and Gough. The specimen figured was communicated by Mr. Gough. A very distinct species nearly allied to *M. tuberculata*, but quite distinct.

1. Flowering branch, *natural size*—2. A flower—3. The same, the sepals forcibly opened and the petals removed to show the stamens —4. Stamens—5. Ovary—6. Ovary cut vertically—7. Cut transversely—8. A portion of the upper surface of the leaf—9. The under surface.

206. *Jonesia Asoca*, Roxb. Arboreous: leaflets 4-6 pairs, lanceolate, racemes terminal and axillary, cymose, stamens usually seven: legume compressed, ovules, all except the terminal one often aborting.

1. Flowering branch, *natural size*—2. A flower split open, showing the long pedicel of the ovary—3. An anther—4. A legume, *natural size*—5. A seed—6. The same cut transversely—*all, except the anther, slightly magnified.*

207. *Mellettia rubigenosa.* Young parts, petiols and racemes covered with rusty tomentum: leaflets 2-3, oblong, lanceolate, acuminated, when young covered with a shining yellowish adpressed pubescence, afterwards more glabrous, racemes elongated, drooping, nearly as long as the leaves, solitary, with shortish lateral peduncles, bearing 3-5 flowers, calyx minutely toothed: vexillum silky on the outside, with two large tomentose culosities on the inside at its base: ovary with 3 ovules: legume linear, lanceolate, pointed.

The specimen here figured was found at Courtallum, I have since got fruit of apparently a different species from Goomsoor.

1. Flowering branch—2. Flower dissected—3. Anthers—4. An ovary split open—*all more or less magnified.*

208. *Crotalario obtecta*, Graham. Suffruticose, erect, covered all over with short dense tomentum: branches terate: stipules and bracteas setaceous, minute: leaves oval, mucronate: racemes terminal, elongated; flowers numerous, approximated: bracteoles on the middle of the petioles, setaceous: calyx deeply 5-cleft, densely covered with rusty tomentum; segments all distinct, linear, acuminated, falcate: legumes sessile, oblong, rather broader upwards, about 4 times as long as the calyx, densely tomentose, many-seeded.

1. Flowering branch, *natural size*—2. A dissected flower—3-4. Anthers—5. Ovary split open—6. Legume, *natural size*—7. A seed, *natural size*—8. Cut vertically—9. Cotyledons removed from the testa—*all with the exceptions mentioned, more or less magnified.*

209. *Desmodium congestum*, Wall. Shrubby: old branches glabrous: young shoots obtusely triangular, clothed with whitish pubescence: leaves 3-foliolate; leaflets oblong-lanceolate, nearly glabrous, except the white pubescent parallel nerves beneath: stipules lanceolate, acuminate: peduncles axillary, solitary, several times shorter than the petiols: flowers numerous, somewhat umbelled: calyx, segments broad, about equal: legumes compressed, slightly pubescent, 4-6 jointed.

1. Flowering branch, *natural size*—2. A flower—3. A cluster of fruit, *natural size*—4. A legume split open—5. A seed—6. The same cut lengthwise, showing the curved embryo—7. The cotyledons.

210. *Butea parviflora*, Roxb. Arboreous, twining: racemes, panicled: pedicels 3-4 times shorter than the calyx: flowers very numerous: calyx, segments nearly as long as the tube, acuminated: corolla glabrous, about twice the length of the calyx: vexillum ovate, emarginate at the apex.

1. A flowering branch, *natural size*—2. A dissected flower—*magnified.*

211. *Quercus semiserrata*, Roxb. Leaves petioled, lanceolar firm and lucid, anterior margins serrate; veins simple and parallel. *Female flowers* in axillary pairs. Nuts oval, acuminate, smooth, of a chesnut colour, base only, embraced by the saucer-shaped, thick, belted, villous cup. Roxb.

1. Flowering branch, *natural size*—2. Female flower with its involucrum—3. A full grown acorn—4. The same cut vertically, showing the embryo at the apex. *Copied full size from Roxburgh's drawing.*

212. *Quercus lenaeafolia*, Roxb. Leaves short petioled, lanceolar, entire, obtusely acuminated, firm and lucid. *Spikes* panicled, terminal. *Nuts* oval: cup in some completely covering the nut, in others variously split and covering more or less of its lower part only. Roxb.

1. *Male* plant, flowering branch—2. *Female* fruit, bearing branch—3. The nut cut vertically, showing the plicate cotyledons, and the manner the integument of the seed enters between the folds—4. Two seed, "so closely united as to seem a simple seed with a double corculum at the apex."

213. *Quercus squamata*, Roxb. Leaves broad, lanceolar, entire, somewhat acuminate, coriaceous and glossy. *Spikes* axillary and terminal, often compound, the terminal ones panicled, cups growing together massy, rough and scaly, embracing slightly, the base of the hemispherical, hard, glossy, nut. Roxb.

1. *Male* flowering branch—2. A male flower opened seen from above—3. *Female*—A fruit bearing branch—4. An acorn cut vertically.

214. *Euonymus crenulatus*, Wall. Leaves elliptical, obtuse, short petioled, crenulato-serrated towards the apex, coriaceous, convex and bullate above: peduncles solitary, shorter than the leaves, once or twice dichotomous, few flowered, petals 5 (or occasionlly 6) orbicular; stamens very short; anthers opening transversely, margin of the torus free: style very short, stigma blunt, somewhat umbilicated: capsule turbinate, 5-celled, lobed at the apex: seed solitary in each cell, hilum truncate without an arillus—flowers purple.

Obs.—The specimens figured are not those described, hence some discrepancy between the figure and description, but not enough I think, to constitute them distinct species, unless the fruit prove them so.

Hab.—*Shevagherry hills.*

1. Flowering branch, *natural size*—2. An expanded flower seen from above—3. The same, the petals removed—4. A stamen—5. Ovary cut vertically—6. Cut vertically, *all magnified.*

215. *Euonymus Goughii*, (R. W.) Shrubby, glabrous, ramuli compressed: leaves somewhat triple-nerved, shortly petioled, quite entire, oblong-ovate, acute at both ends; acuminated: peduncles axillary, short, 1-3 flowered, calyx scutellate, 5-lobed: petals 5, orbicular, fimbriated on the margin, stamens 5, inserted on the disk, connectivum of the anthers broad, cells placed transversely, dehiscing lengthwise, ovary immersed in the disk, 5-celled, with 2 ovules in each.

Hab.—*Neilgherries*—G. Gough, Esq.

1. Flowering branch, *natural size*—2. Expanded flower—3. The same, petals removed—4. A stamen—5. Ovary cut vertically—6. Cut transversely.

216. *Jambosa aquea*, (D.C.) Leaves almost sessile, oblong, lanceolate narrower, and somewhat cordate at the base: peduncles terminal, or from the upper axils 3-7 flowered, (flowers white) fruit turbinate, flattened at both ends.

1. Flowering branch, *natural size*—2. A dissected flower.

217. *Rotala fimbriata*, (R. W.) Petals fimbriately divided on the margin.

Hab.—*Mysore in paddy fields or on the borders of tanks.*

Obs.—The genera *Ammannia Nesœa* and *Rotala* appear to be very imperfectly separated by their present characters. I propose amending them thus—All the species of *Ammannia* with an uneven number (3—5) of parts of the flower, and a 3-celled ovary *Am. pentandra* to be referred to *Rotala*—All those having an even number (4) with the petals and stamens equal, and the ovary 2-celled, to *Ammannia*—those with 4 petals and stamens and a 4-celled ovary (*Am. rotundifolia*) to *Mirkooa*, and lastly, those having twice as many stamens as petals and a 4-celled ovary, (*Am. Octandra*) to Nesœa—*Mirkooa* is one of our sub-genera of *Ammannia*, which I propose to elevate to the rank of a genus.

Petals and stamens 3-5, ovary 3-celled, flowers axillary, solitary.—*Rotala.*
——————— 4, ovary 2-celled, flowers axillary. *Ammannia.*
——————— 4, ovary 4-celled, flowers spiked. *Mirkooa.*
Stamens twice as many as the petals, ovary 4-celled, peduncles axillary, 1-3 flowered. *Nesœa.*

218. *Quercus ferox*, Roxb. *Leaves* ovate-lanceolate, and oblong-acute, entire, glossy. *Male spikes* pointed; *Flowers* with a six-cleft calyx, and twelve stamina. *Cup* an entire evalvular capsule, armed with many compound thorns, hiding completely the sub-ovate acorn. *Roxb.*

1. *Male* flowering branch—2. Male flower—3. *Female* spike—4. Capsule opened, showing the enclosed nut.

219. *Quercus fenestrata*, Roxb. *Leaves* petioled, lanceolar, entire, finely acuminate, firm and polished. *Spikes* panicled, terminal. *Flowers* tern; *male* dodecandrous. *Nut* hemispherical, all but the obtuse apex hid in the oblately spherical, muricated cup. *Roxb.*

1. *Female* flowering branch—2. Ovary exposed by the removal of part of the calyx—3. Ovary cut vertically, two pendulous ovules in each cell—4. Cut transversely—5. A full grown acorn, the nut enclosed in the cup—6. The same cut vertically—7. The nut removed from the cup—8. Cut vertically, showing the superior embryo.

220. *Quercus lappacea*, Roxb. *Leaves* lanceolar, entire, much acuminated, downy underneath. *Spikes* axillary, solitary. *Nut* ovate, villous, slightly embraced by the inoffensive, echinate, saucer-shaped cup. *Roxb.*

1. Male flowering branch—2. Male flower—3. Ovary—4. Female branch—5. Acorn cut vertically.

221. *Quercus turbinata*, Roxb. *Leaves* lanceolar, entire, obtusely acuminate, hard, glossy. *Spikes* terminal, generally paired; the lower part occupied by clusters of female flowers, and the upper part crowded with male ones. *Nuts* turbinate, smooth; *cup* small, rugose. *Roxb.*

1. Flowering branch—female flowers below, male above—2. *Male* flower—3. Female hermaphrodite divided vertically—4. Ovary cut transversely—5. Acorn.

6-7-8-9. Belong to *Quercus acuminata*, Roxb. introduced through a mistake of the copyist—and printed before the blunder was discovered.

No. XII.

EXPLANATION OF PLATES.

222. *Elatine* (Bergia) *æstivosa*, W. and A. Glabrous: stems much branchad: leaves opposite, obovate, or oblong, attenuated towards the base; those on the flower-bearing branches almost linear, flowers pedicellate, axillary, opposite, solitary: sepals and petals 5: stamens 10: styles short.

1. A flowering branch—*natural size*—2. A dissected flower, showing the hypogynous insertion of the stamens, the 5 clavate styles and a detached petal—3. Stamens—4. The ovary entire—5. Ovary cut vertically, showing the central placenta—6. Cut transversely, 5-celled—7. A portion of the stalk, showing that the flowers are occasionally paired—8. A capsule cut transversely—*all more or less magnified.*

223. *Ochna Wightiana*, Wall. Leaves ovate, bluntish, rounded at the base, conspicuously veined, slightly serrulated, pedicels solitary, or in pairs, from the apex of a very short leafless shoot: sepals oval, obtuse, petals (deciduous) and ovaries 5, stigma 5-cleft.

1. Flowering branch—*natural size*—2. A flower partially dissected —3. Stamens—4. Ovary, style and stigmas—5. The fruit nearly full grown—6. A carpel—7. The same, showing the immature seed—*all more or less magnified.*

224. *Agrimonia Eupatorium*. Lin. (*A. ceylanica*, Moon). Stem, leaves pinnate, leaflets elliptic—oblong, terminal one stalked; calyx encompassed with bristles: spikes elongated.

1. Plant—*natural size*—2. An expanded flower—3. The trifid bracteas—4. A flower split open, to show the position of the ovary and insertions of the stamens—5. Anthers—6. An ovary cut vertically, seed pendulous—7. Cut transversely—8. Portions of a leaf magnified to show the hairs.

Dr. Arnott has decided,by comparing specimens, that this plant is identical with the European one, but judging from characters only I think there is reason to doubt that.

225. *Rubus rugosus*, Lin. Shrubby, armed with scattered straight or recurved prickles, branches, calyx and under side of the leaves villous, with tawny tomentum: leaves simple, cordate, 3-5 lobed, reticulated and pitted underneath, scabrous and pustulated above, stipules and bracteas villous, racemes few flowered, axillary and terminal, segments of the calyx oblong, lanceolate, equal to the corolla.

1. Flowering branch—*natural size*—2. A dissected flower, showing the ovaries detached from the sepals, petals and stameus—3. A petal —4. An ovary and style—5. The same cut vertically, ovule pendulous—6. Ovary cut transversely—7. Stamens—8. Portions of a leaf magnified. to show the hairiness and reticulations.

226. *Eriobotrya japonica*, Lin. Leaves lanceolate, somewhat cuneate at the base, slightly wrinkled, serrated, woolly on the under side, lobes of the calyx rounded.

1. Flowering branch—*natural size*—2. A flower dissected, showing the petals and stamens, the lobes of the calyx removed—3. The ovary—the sepals partly removed to bring it into view.

227. *Combretum Wightianum*. Climbing, glabrous: leaves opposite, elliptic—obovate, usually with a short sudden acumination, coriaceous, shining above: spikes axillary, on longish peduncles, elongated, lax, rachis and calyx pubescent: bractioles obsolete, or resembling minute tubercles: tube of the calyx two or three times longer than the ovary, limb cleft to near the middle, with a hairy ring below the insertions of the stamens; segments triangular, ovate, acute, recurved, petals elliptic, oblong, emarginate.

1. Flowering branch—*natural size*—2. An expanded flower—3. The same split open, showing the insertions of the petals and stamens, the style and stigma—4. Stamens—5. An ovary cut vertically, two ovuled—6. Cut transversely—7. Fruit—*natural size*—8. Cut transversely—*natural size*—9. Cut vertically, seed pendulous from a slender podosperm—10. Seed removed—11. A seed, the testa removed, showing the cotyledons unfolded and superior radicle—*with the exceptions mentioned, all more or less magnified.*

228. *Photinia Lindleyana*, W. and A. Leaves elliptical or oblong, lanceolate, acute, serrulate, or sometimes almost quite entire: panicles small, compound; ramifications glabrous: pedicels equal to the calyx: cells of the ovary spuriously bilocular: Fruit glabrous, often one-seeded from abortion.

1. Flowering branch—*natural size*—2. A dissected flower—3. The same cut vertically, showing the insertion of the stamens, the two styles, and the 2-celled half adhering ovary, with ascending ovules—4. Stamens—5. Ovary cut transversely, 2-celled, with two ovules in each—6. A fruit full grown—*natural size*—7. The same, *magnified*—8. Cut transversely, 2-celled, with one seed in each—9. A seed—10. Cut transversely—11. Cut vertically, showing the cotyledons about half grown—12. Cotyledons and radicle removed.

229. *Alchemella vulgaris*, Lin. (*Al. ceylanica*, Moon). Leaves reneform, plaitedly concave, 9-lobed, serrated. Flowers dichotomously corymbose—varies much in size and pubescence.
I have now speeimens of this plant from Ceylon, Neilgherries, and the Pulney mountains.

1. Plant—*natural size*—2. A portion of the rachis with a bractea, and a solitary axillary flower—not however the usual arrangement—3. An expanded flower, showing the insertion of stamens on the throat of the calyx tube—4. The flower split open, showing the ovary with its lateral style—5. Stamens—6. The ovary cut vertically, ovule ascending from the base of the style—7-8. Portions of leaves magnified to show the hairs—*all more or less magnified.*

230. *Rubus gowreephul*, Roxb. Stems somewhat terete, and like the petiols and peduncles armed with recurved prickles and densely hispid, with brown horizontal hairs, leaves pinnately 3 foliolate, leaflets from elliptical to nearly orbicular, toothed-serrated, upper side glabrous, under white and tomentose, with recurved prickles on the midrib and some of the nerves: stipules subulate, panicles small, axillary and terminal, corymbose, segments oblong, white, and shortly tomentose on both sides, petals cuneate, obovate, longer than the calyx.

1. Flowering branch—*natural size*—2. A flower cut vertically—3. A similar section of a fruit nearly ripe—4. Stamens—5. A detached ovary—6. Cut vertically—7. A detached achenium—8. The same cut vertically, showing the seed and position of the embryo—9. Cut transversely—10. The embryo removed.

231. *Rubus Wallichianus*, W. and A. Stems somewhat terete, and the petioles and peduncles and pedicels armed with recurved prickles and densely hispid with brown horizontal hairs: leaves pinnately trifoliolate; leaflets nearly orbicular, toothed-serrated, green on both sides, glabrous above, slightly villous beneath; midrib and some of the larger nerves prickly beneath: stipules subulate: panicles large, compound, somewhat corymbose, axillary and terminal: segments of the calyx oblong-lanceolate, tomentose, hispid at the base: petals oblong, the length of the calyx.

1. Flowering branch—*natural size*—2. A dissected flower.

232. *Rubus lasiocarpus*, Sm. Stems terete, long, rooting at the extremities, glabrous, glaucous, armed with curved prickles: branches and petioles tomentose and prickly: leaves pinnated; leaflets 3-7, somewhat plicate, from ovate or obovate and acuminated to lanceolate, terminal one roundish and often 3-lobed, glabrous above, white and tomentose beneath, irregularly toothed and serrated: stipules subulate: panicles racemose, chiefly terminal: segments of the calyx oblong, attenuated at the apex, tomentose: petals roundish, shorter than the calyx: carpels tomentose.

1. Branch in fruit—*natural size.*

233. *Potentilla Mooniana*, R. W. Stems creeping and with the under surface of the leaves clothed with silky pubescence, leaves interruptedly pinnate, larger leaflets, from oval to obovate, obtuse, acutely serrated, smaller ones sub-orbicular, nearly glabrous above: flowers racemose: bracteas entire or dentate: accessory sepals larger, dentate: petals obovate, yellow.

Newera Ellia Ceylon, on the banks of a stream creeping among grass.
The petals were lost before the drawing was made, but not conceiving them necessary for the identification of the species I have figured it, notwithstanding this defeet. The plant figured is nearly two feet long.

1. Plant—*natural size*—2. A flower expanded but without petals—3. Stamens—4. A fruit cut vertically—5. The entire fruit—6. A detached carpel—7. The same cut vertically, with its enclosed seed—8-9. Portions of leaves intended to represent the upper and under surfaces but badly executed, the one with too much the other with too little pubescence—*all more or less magnified.*

234. *Rosa involucrata?* Roxb. Subscandent, armed with strong stipulary straight prickles, flowers in subsessile fascicles, bracteas in form of a 4 or 5-leaved inferior calyx.

My specimen differs from Roxburgh's description in having the leaflets glabrous beneath, except the midrib which is somewhat hairy.

I am indebted to Lieut. Munro for my specimen which he found wild in Mysore.

1. Flowering branch—*natural size*—2. A cluster of flower-buds—3. A detached bractea—4. Stamens—5. A carpel, with style and stigma —6. The same cut vertically, showing the pendulous ovule.

235. *Semecarpus Grahamii*, R.W. Leaves cuneato-lanceolate, acute, coriaceous, glabrous above, pubescent beneath, petiol short, furnished with 4 subulate bodies (as in *Holigarna longifolia*): panicles racemose, contracted, congested towards the summits of the branches: calyx truncated, cup-shaped, adnate, with the lower half of the young fruit: styles 3, lateral, near the apex, reflexed, stigmas capitate; ovary and young fruit covered with rusty colored hairs; ovule solitary, pendulous from the base of the styles.

I dedicate this species to the memory of the late John Graham, Esq. of Bombay, from whom I received the specimen. See Illustrations of Indian Botany, vol. I. page 180.

1. A branch covered with young fruit—2. A young fruit—3. The same cut vertically, showing the position of the ovary—*both magnified*—4. A leaf—*natural size.*

PEGIA, R. W.

GEN. CHAR. Flowers bisexual, calyx small, 5-lobed, persistent. Petals 5, roundish, stamens inserted beneath the margin of the disk, alternately shorter, disk annular, fleshy, embracing the ovary and style, stigma simple, berry globose, 1-seeded—Leaves unequaily pinnate.

The simple leaves of my plant seem to indicate that it is erroneously referred to this genus, but I have introduced it on account of the peculiar fruit, erect seed, being unusual in this order.

236. *P. ? Colebrookiana*, R. W. Arboreous, leaves coriaceous, alternate, simple, oblong or obovate, quite entire, acute, or ending in a short abrupt acumen, parallelly veined, glabrous, racemes axillary, or from the scars of fallen leaves, much shorter than the leaves, many-flowered. Fruit superior, globose, pointed with the persistent fleshy style and capitate stigma: perecarp containing between its laminæ numerous small cells, the base bound by a ring. Seed one, erect, cotyledons thick, fleshy, radicle inferior.

Hab.—*Shevagerry Hills.*

1. Branch with mature fruit—2. A fruit cut transversely, showing the thick fleshy cotyledons—3. Cut vertically, seed erect, radicle at the base—4. A seed, the lobes separated to show the radicle and plumule—5. A single lobe, with the radicle at the base—*all more or less magnified.*

237. *Buchanania lanceolata*, R. W. Leaves lanceolate, acute, or acuminate, quite entire, glabrous, congested towards the summits of the young shoots: panicles pubescent, erect, terminal and axillary from the summits of the branches, contracted: flowers small, numerous, capitate on the ends of the short lateral divisions of the panicle.

Malabar near Quilon.

I have not seen the fruit. The leaves are so like those of *Mangifera indica* that the same terms serve to characterize both.

1. Flowering branch—*natural size*—2. A flower—3. The same, petals removed—4. Stamens—5. Ovary surrounded by the crenately 10-lobed disk—6. Ovary cut vertically, the ovule represented erect, but perhaps erroneously—7. A diagram of the petals.

238. *Rhizophora mucronata*, Lin. (*R. candelaria*, W. and A. Prod.) Leaves oval, long-cuspidate, segments of the calyx triangularly ovate.

1. A flowering branch—*natural size*—2. An expanded flower seen from above, sepals and petals 4, stamens 8—3. A flower after blooming the 8 thick reflexed bodies, the bodies of the anthers after shedding their pollen, the thinner ones at the base, the withered valve which closed the polleniferous cells—4. Anthers before and after dehiscence, showing the very peculiar formation of the anther—5. A fruit after germination has considerably advanced—*all, except the last, more or less magnified.*

239. (A) *Bruguiera Rheedii*, Blume? (*B. gymnorrhiza*, W. and A. Prod.) Leaves oval, oblong, acuminate at both ends; calyx about 12-cleft, lacineæ at length erect, or incurved, petals somewhat villous at the base, otherwise glabrous, segments acute, two-bristled at the points with a fifth bristle in the fork.

1. Flowering branch—*natural size*—2. A flower, the calyx removed to show the petals—3. A detached petal—4. Stamens—5. The ovary—6. The same cut vertically, showing the cells at the base of the style—7. The same cut transversely—8. A fruit after germination has commenced.

(B) *Bruguiera eriopetala*, W. and A. Leaves oval, oblong, acuminate at both ends: calyx about 10-cleft, the edges of the petals from the base to the apex densely clothed with silvery hairs; segments somewhat obtuse, one-bristled at the apex, with a longer one in the fork.

1. A full grown flower—2-3. Back and front views of a petal, showing its ciliate margins, the single bristle on each division, and the longer one in the fork—*all more or less magnified.*

CERIOPS, (Arn.)

GEN. CHAR. Calyx 5-cleft. Petals 5, emarginate, before expansion, embracing two stamens. Stamens 10, erect: anthers cordato-ovate, much shorter than the filaments. Ovary half adherent, 3-celled, with two ovules in each cell: stigma simple: Fruit somewhat ovate, crowned near the base, with the reflexed segments of the calyx. (For a fuller generic character see Annals of Nat. History, 1 p. 363—and Illus. Ind. Bot. No. 13.)

240. *C. Candoliana*, Arn. Leaves obovate or obovale, very obtuse, petals, glabrous on the margin, with 1-2 or 3 capitate bristles on the apex.

1. Flowering branch—*natural size*—2. At the period of expansion—3. A flower, sepals removed to show the petals—4. The same, petals removed—5. Stamens—6. Ovary cut transversely—7. Vertically—8. A fruit germinating—9. The same cut vertically to show the seed—10. Cut transversely—11. The radicle cut transversely—*all more or less magnified.*

241. *Scleropyrum Wallichiana*, Arn. *Sphærochrya Wallichiana*, W. and A. Edin. Phil. Jour. (1832) xv. p. 180.

1. A leaf bearing branch—2. A branch in flower—3. A flower—4. The same cut vertically, showing the position of the stamens, the disk covering the tube of the calyx, the style and stigma, and the cell of the ovary, with the central column free at the base, and apparently furnished with pendulous ovules—5. The column and ovules removed from the ovareal cell—6. Stamens—7. A branch covered with fruit—8. An immature fruit cut vertically, the solitary seed pendulous—9. The same cut transversely.

I am indebted to that meritorious officer Mr. Apothecary Bertie for the drawing from which this figure is taken, and also for the flowers and fruit from which the analysis were made, and to whom I proffer my thanks for this favour.

The following generic character and description were drawn up by Dr. Arnott and published in the journal of Zoology and Botany, No. 12.

SCLEROPYRUM, (Santalaceæ.)

" *Flores* abortu dioici? MASC. *Perianthium* ebracteolatum, 5-fidum, laciniis patentibus: tubus turbinatus, intus disco cupulato 5-lobo tectus. *Petala* nulla. *Stamina* 5, sepalis opposita, inter disci marginem perianthiumque inserta. *Filamenta* planiuscula, sepalis paullo breviora, apice bifida, segmento utroque antheræ loculum antice ferente. *Ovarium* (abortivum?) disco immersum, uniloculare, (nunc fere solidum,) columella centrali carnosa cylindrica e basi loculi orta apice libera instructum. *Stylus* conicus crassus. *Stigma* 3-4-lobum, lobis erectis inæqualibus, duobus majoribus. FEM. Flores (fide Rheidei) ut in mare at tubo pyriformi. *Fructus* drupaceus, pyriformis, monospermus, laciniis perianthii marcescentibus et disco coronatus. *Semen* sphæricum, hilo prope basin. *Albumen* carnosum. *Embryo* axilis, gracilis, semine dimidio brevior. *Radicula* supera.

Arbor *(Rheedeo teste) spinosa.* Ramuli *teretes, glabri.* Folia *glabra, alterna, exstipulata, breve petiolata,* 3½-6 *poll. longa,* 1½ 2½ *lata, supra lucida, ex ovatis obtusis in ovalia lanceolata, penninervia, nervis paucis subtus prominulis secus costam decurrentibus, ad axillas nervorum porosa, integerrima.* Flores *subsessiles, dense spicati, spicis in axillis foliorum (sæpius delapsorum) subsessilibus, florentibus folio* 3-4-*plo brevioribus,* rachi *dense pubescenti,* bractea *minute lanceolata pubeseente persistente sub quoque flore.* Flores *masculi illis* Pomaderridis *haud absimiles.* Filamenta *apice infra fissuram dorso, perianthiique laciniæ ad medium, villis albis paucis instructæ.* Drupa *basi in pedicellum brevem crassum attenuata.*

1. S. *Wallichiana*, Arn.—Sphærocarya Wallichiana, *Wight et Arn. in Ed. Phil. Journ.* (1832) xv. p. 180; *Wight, Cat. n.* 948.—Idu-mulli, *Rheed. H. Mal.* iv. t. 18, (fem.)—Tiri-itti-Canni, *Rheed. H. Mal.* vii. t. 30, (mas.)

HAB.—In Malabaria.

In all the flowers I have examined the stigmas appeared imperfect, and although the central column of the ovarium was slightly incrassated at the apex, I could perceive no trace whatever of ovules. I therefore consider them as unisexual, in which I am confirmed by Rheede, who says of his Tiri-itti-Canni, " fructus nulli:" in his Idu-mulli, or the fructiferous plant, no stamens are figured, but they are described; probably they are abortive. Rheede figures the female with thorns on the branches, but not the male, although he describes them. On my specimen there are none whatever, but it is the mere termination of a young branch. Rheede says of the male that it is a parasitical plant, of the female that it is a lofty tree: the former appears to me quite a misconception on his part. The figures he has given, the one of the male flower, the other of the fruit, are faithful."

It appears to me that Rheed: Hort: Mal: 7 tab. 30, quoted by my friend as a figure of the male plant has no connection with this genus or even order, but is a species of *Embelia*, which abounds on the higher eastern slopes of the mountain-range which divides the Peninsula, but in Malabar descends nearly to the plains. Its deep orange coloured flowers render it a striking object. The leaves correspond in form with the figure, and are thick, fleshy, and glabrous, or even polished above.

ERRATUM.

For the observations under *Ratata fimbriata* tab. 217, substitute the following.

OBS.—The genera *Rotala, Ameletia, Ammannia, Nesæa* and *Nimmonia,* appear to be imperfectly separated by their present characters.

I propose amending them as follows. All the species now referred to *Ammannia,* having a 5-cleft calyx, 5 petals, 5 stamens, a 3-celled ovary and 3-valved septifragal capsule I refer to *Rotala:* (*Amm. pentandra* belongs to this genus) those having a 4-cleft calyx, 4 petals, 4 stamens, a 2-celled ovary, and a capsule, opening irregularly or transversely, constitute the genus *Ammannia:* those with a 4-cleft calyx, 4 petals, 4 stamens, a 2-celled ovary, and 2-valved septifragal capsule go to the genus *Ameletia:* (*Amm. rotundifolia* and *Nimmonia floribunda* come here) and lastly those having a 4 or 6-cleft calyx, 4 or 6 petals, 8 or 12 stamens, a 3 or 4-celled ovary, and a 3 or 4-valved capsule constitute the genus *Nesæa*--(*Ammannia octandra* comes here. For further details see Illustrations of Indian Botany under *Salicarieæ.*)

The essential characters of these genera will then stand thus:

1. Calyx 3-5-cleft: petals 3-5: stamens 3-5: ovary 3-celled, capsule 3-valved, septifragal. *Rotala.*

2. Calyx 4-cleft, the sinuses furnished with accessory teeth: petals caducous, 4 or wanting, by abortion, stamens 4, ovary 2-celled, capsule thin and membranous, bursting irregularly or transversely, not septifragal. *Ammannia.*

3. Calyx 4-cleft, without accessory teeth: petals 4, marcescent, stamens 4, ovary 2-4-celled, capsule 2 or 4-valved, septifragal, (flowers in bracteated spikes, calyx conspicuously bi-bracteolated at the base.) *Ameletia.*

4. Calyx 4 or 6-cleft, with accessory teeth: petals 4 or 6: stamens 8 or 12: ovary 3 or 4-celled, capsule enclosed within the calyx, dehiscing at the apex. *Nesæa.*

242. *Dalbergia tamarindefolia,* (Roxb.) Leaflets from 12 to 16 pairs, linear, oblong: racemes lateral, short, ovate, dense: filaments nine in one body; anthers 2-lobed: legumes swelled, scabrous, where the single seed is lodged. *A climbing shrub—climbs up and over large trees.*

1. Flowering branch, as copied from Roxburgh's drawing—2. A dissected flower—3. A legume.

243. *Dalbergia stipulata,* (Roxb. Mss. D. stipulacea, Fl. Ind. 3 p. 233.) Shrubby: leaflets from 8 to 12 pairs, alternate, linear, oblong: stipules and bracteas oblong falcate: panicles axillary and terminal, filaments 10 in two equal bodies. *Flowers small, blue.*

1. Flowering branch, as copied from Roxburgh's drawing—2. A dissected flower—3. The bractea and bracteoles.

244. *Dalbergia robusta,* (Roxb.) This species is omitted in the Fl. Ind:—D.C. gives the following character from specimens communicated by Dr. Wallich. It differs a little from the figure. "Leaflets 7-9, oval, or obovate, obtuse, sub-mucronulate, minutely pubescent: racemes spiciform, longer than the leaves, pedicels aggregated"—Flowers small, numerous, stamens monadelphous, with a dorsal fissure fruit unknown.

1. Flowering branch, as copied from Roxburgh's drawing—2. A dissected flower—3. Ovary cut longitudinally—4. A legume.

245. *Sophora robusta,* (Roxb.) Ormosia ? sp. R. W. There is no account of this plant in Roxburgh's Flora Indica, it appears however to be a species of Ormosia, the other species of which genus are from South America. Whether or not this is an Indian plant I am unable to say.

1. Flowering branch, as copied from Roxburgh's figure—2. A dissected flower—3. A legume—4. A seed cut transversely—5. Cut vertically, to show the form and position of the radicle.

246. *Pterocarpus dalbergioides,* (Roxb.) Leaves pinnate; leaflets about 9, alternate, ovate, lanceolate, smooth: panicle terminal: stamens 10 in two equal portions. *Andaman red wood—a very large tree* 15 *feet in circumference. Flowers pure yellow delightfully fragrant.*—Roxb.

1. Flowering branch—2. A dissected flower—3. A legume—4. The same opened to show the two seed.

247. *Erythrina ovalifolia,* (Roxb.) Arboreous; armed: leaves ternate, oval; petioles armed: racemes terminal, horizontal: banner obcordate. *Two umbilicate glands on the petiols at the insertion of the leaflets, flowers dark red.*—Roxb.

1. Flowering branch, as copied from Roxburgh's drawing—2. A dissected flower—3. A legume partly open to show the seed.

248 *Cyamopsis psoraleoides,* (D.C.) Dolichos fabæformis. (Linn.)

1. The upper portion of a plant bearing both flowers and fruit—2. Column of stamens monadelphous—3. The petals detached—4. Stamens, anthers pointed—5. Ovary split open, many-seeded—6. Portion of a legume opened to show the seed *in situ*—7. The same cut transversely—8. A seed cut transversely—9. Cut vertically, showing the cotyledons and incurved radicle—10. Cotyledons removed from the testa.

249. *Phaseolus psoraleoides,* (W. & A.) Erect or twining, young shoots and rigid peduncles beset with short rigid adpressed hairs: leaves trifoliolate, membranous, glabrous above, sprinkled with silky hairs beneath, leaflets ovate or lanceolate, acute: stipules sessile, erect, acute: racemes 5-8 times longer than the leaves, floriferous, part elongated; peduncle very long, stout, terete: pedicels in pairs: bracteas and bracteoles subulate, setaceous longer than the calyx, caducous: calyx 5-toothed: keel circinate: legumes pendulous, nearly straight, slightly compressed, long linear, many-seeded, pubescent. Seeds compressed, slightly truncated at both ends—Stem twining when growing in good soil and supported by bushes—flowers deep brownish purple.

1. Top of a flowering plant, *natural size*—2. A dissected flower—3. An anther—4. Top of the style and stigma—5. The ovary cut lengthwise--6. A mature pod after dehiscence, *natural size*--7. A seed.

250. *Alysicarpus pubescens,* (Law. Mss).--Herbaceous, erect, stems terete, hairy, leaves short petioled, linear lanceolate, acute, 3-nerved, glabrous above, pubescent beneath, racemes terminal, spicate, flowers subsessile, calyx 4-parted to the base, segments lanceolate, acute, clothed with long silky hairs, the upper one slightly bifid at the apex, legume terete, much contracted between the seeds, reticulated and corrugated on the sides, glabrous.--Belgaum common--Law. This species is allied to A. longifolius, but quite distinct.

1. A flowering plant, *natural size*--2 A dissected flower, calyx forcibly opened and the petals removed to show the ovary and stamens--3. Stamens--4 Anthers before the expansion of the flower, back and front views much magnified--5. The petals detached--6. Ovary cut longitudinally--7. Legume *in situ*--8. A seed--9-10-11. The same dissected. *All more or less magnified.*

251. *Alysicarpus longifolius,* (W. & A.) Herbaceous, erect, branched, stems terete, glabrous: leaves short petioled, linear lanceolate, somewhat obtuse, slightly cordate at the base, glabrous above, a little pubescent beneath: stipules large, longer than the petiols, racemes spike-like, very long, pedicels short, approximated: calyx 4-cleft, to near the base; segments erect, overlapping at the edges, oblong, striated, hairy, ciliated, upper one shortly bifid, legume slightly contracted between the seeds, reticulated, pubescent 5-6 seeded, about twice the length of the calyx.

Not unfrequent in black cotton soils in the Ceded Districts and Circars.

1. Flowering branch--2. A dissected flower, calyx split open to show the ovary and stamens--3. Petals--4. Stamens detached--5. Anthers--6. Ovary opened--7. Legume, *natural size*--8. The same split open--9. A seed--10. The same cut transversely--11. Cut vertically, showing the curved radicle--12. Cotyledons and radicle, testa removed, *all more or less magnified.*

252. *Cassia bacillus,* (Roxb.) Leaflets from 10 to 12 pairs, oblong or oval, obtuse: stipules crescent-shaped, adnate: racemes terminal, on short lateral branches: the three lower filaments with an oval swelling near the middle--(Roxb.) Rumph: Amb: 2 t. 22--Arboreous, calyx of 5 dull redish ovate leaflets, petals of a lovely pink or rose colour, seed albuminous, when in flower the most beautiful of Cassias. Roxb.

Obs.—I have found it quite impossible to reduce this and a few others without ruining the figure. They therefore must stand for two plates each.

1. A flowering branch--2. A portion of an ovary split lengthwise--3. A legume--4. A portion cut lengthwise, to show the partitions--5. A portion with a seed *in situ.*

253. *Cassia alata,* (Linn.) Shrubby, branches spreading, irregularly angled, glabrous: leaflets 8-14 pairs, obovate, oblong, very obtuse, mucronate, glabrous, or very nearly so on both sides, the lower pair close to the branch and at a distance from the next pair: petiol triangular and the rachis without glands: stipules lanceolate, pointed, rigid, persistent: racemes terminal: legumes long, enlarged on each side with a broad crenulated wing, flowers yellow.

1. A leaf and raceme, *natural size*--2. A flower, the petals removed--3. The petals--4. One of the larger anthers--5-6. The small anthers--7. The ovary--8. A transverse section of the legume with a seed *in situ*--9. A portion of a legume cut lengthwise.

ACROCARPUS, R. W.

Gen. Char.--Calyx subcoriaceous, ebracteolate, campanulate, 5-cleft, segments erect, the superior and inferior a little larger. Torus covering the tube. Petals oblong, subcoriaceous, about equal, sessile long persistent, inserted on the mouth of the calyx and a little longer than its lobes: æstivation subimbricate, stamens alternate with the petals, filaments broad at the base, subulate, two or three times longer than the petals, straight, anthers oscillatory, ovary long, stipitate, (stipe free) oblong linear, falcate, pointed with the short incurved acute style, many (about 15) ovuled, legume unknown.

A large tree leaves unequally pinnate, leaflets 3-4 pair, pale beneath, flowers scarlet--*Courtallum.*

See Illustrations of Indian Botany, p. 198.

254. *A. fraxinifolius,* Arn.

1. Flowering branch, *natural size*--2. A flower, *about the natural size*--3, The same split open to show the insertion of the petals and stamens--4. A petal--5. Anthers--6. Ovary cut lengthwise--7. The same cut transversely, obtusely 4-angled--8. A young legume--9. A leaf.

SPHŒROCARYA, Wall.

Gen. Char.--Calyx 5-parted: petals 5 minute, alternating with 5 stamens: 5 minute fimbriated scales between the stamens and sepals, ovary without a disk, style undivided, drupe inferior but smooth, globose, without a suture.--Wall.

A showy tree with cinereous coloured bark, alternate, exstipulate leaves, small inconspicuous greenish flowers, and pear-shaped drupaceous fruit.

255. *S. edulis,* Wall.

1. Flowering branch, *natural size*--2. A flower seen from above--3. The same from behind--4 Dissected--5. A detached sepal with its fimbriated scale--6. An anther--7. The ovary--8. The same cut vertically, showing the ovule supported on a spiral podosperm--9. A full grown fruit--10-11. Sections of the same showing the nut *in situ*--12. A nut--13. The same cut vertically, showing the minute embryo in the apex of the seed.

I have copied this figure from Wallich's Tentamen Flor: Nepalensis as a suitable companion to Scleropyrum Wallichianum, tab. 241.

POLYODONTIA, Blume.

Gen. Char.--Calyx inferior, campanulate, 6-toothed, deciduous: petals 6, minute, inserted on the margin of the calyx: stamens numerous, 12-18, about equal, inserted with the petals: ovary free, 1-celled, with 2 pendulous ovules: style one; stigma peltate: drupe reniform, dry, 1-seeded: embryo exalbuminous, inverse.

256. *P. ? Ceylanica,* (R. W.) Leaves from elliptic, very obtuse at both ends to sub-orbicular, glabrous, when dry, of a rusty brown colour beneath, racemes axillary, solitary, (always ?) about the length of the leaves, covered with short appressed hairs; flowers small, petals 5, reflexed, externally, very hairy round the margin.

Ceylon in forests above Rumbady.

1. Flowering branch, *natural size*--2. A flower--3. The same dissected to show the position of the ovary--4. A petal seen from within--5. The same from without--6. Stamens--7. Stigma--8. Ovary cut vertically, showing the pendulous ovules--9. Cut transversely--10. A young fruit--11. The same cut transversely, seed solitary, *all more or less magnified.*

257. A. *Ameletia indica,* (D.C.) Procumbent: leaves obovate, opposite: spikes axillary: flowers sessile, solitary in the axils of the obovate bracteæ, bracteoles subulate, membranaceous, shorter than the tube of the calyx: stamens about equalling the calyx.

1. A flowering plant, *natural size*--2 A flower--3. The same cut open to show the ovary *in situ*--4. Stamens--5. A portion of the rachis showing the relative position of the flowers and bracteas--6. The ovary cut vertically--7. Cut transversely--8. A ripe capsule after dehiscence--9. A seed--10. The same cut transversely--11. The embryo--12. A detached leaf of the most usual form, *all more or less magnified.*

257. B. *Ameletia tenuis,* (R. W.) Stems somewhat procumbent at the base, afterwards erect, most slender: leaves opposite, orbicular, spikes terminal, flowers solitary, longish pedicelled from the axil of a linear bractea; bracteoles large; stamens included, style projecting, capsule ovate, 2-valved.

1. Flowering plant, *natural size*--2. A flower--3. Cut open to show the ovary, stamens and petals--4. Stamens--5. Stigma--6. Rachis and flowers *in situ*--7. A capsule dehiscing--8. The same split in two, showing the central placenta.

258. *Ameletia rotundifolia,* (R W.) Stems diffuse, procumbent; branches erect: leaves orbicular, opposite, sessile: spikes congested near the extremities of the branches: flowers solitary, in the axils of the sessile suborbicular or broad ovate cordate, pointed bracteas; bracteoles very minute: stamens much longer than the calyx: capsule 4-valved.

1. A plant, *natural size*—2. A flower with its bractea and bractioles—3. The same dissected—4. Stamens—5-6. Ovary cut vertically and transversely—7. A capsule—8. The same dehiscing—9. A seed, *all more or less magnified.*

259 *Nesæa triflora,* Kunth.

1. Plant, *natural size*—2. A cyme—3. A flower after the fall of the petals—4. A flower split open, showing the insertion of the petals and stamens and the free ovary—5. Stamens—6-7. The ovary cut vertically and transversely, 3-valved, 3-celled.

Obs.—The analysis are taken from one of the lateral flowers, the centre ones being too far advanced—the centre one has a 4-lobed calyx and 4-valved capsule.

260. A. *Rotala verticellaris,* (Linn.) Calyx 3-5 lobed, petals and stamens 3-5: leaves linear lanceolate, verticelled.

1. Plant, *natural size*—2. A flower—3. The same split open, stamens, petals, and lobes of the calyx 3; style short—4. Stamens—5-6. Ovary cut vertically and transversely, 3-celled—7-8. Capsule dehiscing, and the valves opened, 3-valved—9. A seed.

260. B. *Rotala Roxburghiana,* (R. W.) Ammannia pentandra, (Roxb.) Calyx 5-lobed: petals and stamens 5: leaves opposite.

1. Plant, *natural size*—2. A flower with its bracteas—3. The same split open—4. A capsule dehiscing, 3-valved. *All more or less magnified.*

No. XV.

EXPLANATION OF PLATES.

380. *Mucuna utilis* (Wall. MSS.) the prineipal difference of this species, if indeed a species and *M. prurita* consists in the hairs of its legumes being oppressed and almost silky not erect rigid and stinging. In all other respects they sufficiently agree the flowers in both are purple the greater size of this is probably attributable to cultivation in which state only it is known.
1 Raceme *natural size*--2 a dissected flower—3 stamens showing the alternate long and round anthers--4 round anthers--5 long ones--6 ovary--7 the same opened--8 cluster of pods--9 portion of a legume opened--10 a seed--11 the same cut longitudinally--12 transversely--13 the cotyledons testa removed—14 embryo.

281. *Bupleurum plantaginifolium* (R. W.) perennial, erect: stems terate, naked towards the base: leaves congested towards the apex of the stem, remote on the branches, somewhat imbricating at the base, petioled, spathulate, about 11 nerved, the middle one much larger: general umbel with 8-10 rays; partial with 10-14 flowers: leaflets of the involucre and involucel, 5-6 obovate, cuniate or oblong, decurrent on the stem, forming acute angles: fruit, prominently ribbed interstices with single large vittæ.

Obs. In the accompanying figure, the transverse section of the seed is not well represented. The plant attains the height of from 7 to 11 feet.
Hab. Elk. Hill. Neigherries.—Lieut. Munro, to whom I am indebted for the specimens.
1 A flowering branch—2 a partil—3 a flower fruit view--4 the same side-view—5 anthers—6 a petal--7 ovary—commissure of a simple mericarp—9 mature fruit the mericarps separating suspended from the carpophore--10 a fruit before the separation of the mericarps, but badly represented—11 cut transversely bad—12 the mericarp cut vertically showing the embryo. The seed, the testa removed. I had not an opportunity of checking the dissections of this figure until too late and the artist was not then conversant with the structure of this order.

282. *Zizyphus glabrata* (Heyne:) unarmed: leaves ovate-oblong or obovate, obtuse, crenate-serrated, blabrous, coriaceous; stipules both caducous: cymes scarcely longer than the petioles: ovary 2-celled: styles 2, nearly distinct: drupe turbinate: nut hard and thick, obovate, rugose, flattened, 1-2-celled.
I Flowering branch, *natural size*—2 expanded flower--3 stamens—4 ovary immersed in the disk cut vertically--5 ovary cut transversely 2-celled all more or less magnified.

283. *Nomismia nummularia* (W. & A.) petioles longer the leaves: leaflets cuneate-obovate, broader than long, retuse; racemes few-flowered, lax, much shorter than the petioles, usually on the young shoots: calyx-segments (except the lowest) about half the length of the corolla: legume strongly wrinkled with a few parellel transverse slightly branched nerves, with reticulating connecting veins, terminated by the straight mucro-like base of the style, 1-seeded.
1 Portion of a plant *natural size*—2-3-dissected flower--4 united filaments--5 anthers--6 ovary cut open 1-seeded--7 mature pod opened--8 cotyledons testa removed all more or less magnified.

284. *Uraria hamosa* (Wall.) shrubby, diffuse; young parts clothed with short hooked hairs: leaves simple and trifoliolate; leaflets elliptic or roundish, sometimes emarginate, glabrous above, softly pubescent beneath: racemes axillary and terminal, hispidly hairy, before expansion of the flowers oblong or cone-like and imbricated with bracteas, in fruit becoming much elongated and lax; baacteas caducous, ovate with a long subulate point, hairy; pedicels shortly hairy, incurved at the apex. calyx shortly hairy, short, not longer than the first joint of the fruit; upper tip 2-toothed: segments of the lower one ovate-acuminated: legume 2-6-jointed, pubescent.
1 Flowering branch--2 dissected flower--3 legume—copied from Roxburgh's drawing.

285. *Lourea vespertilionis* (Desv.) lateral leaflets none, or small, obliquely cuneate at the base and truncated at the apex; terminal one transverse, about 10 times broader than long, tipped with a spiny bristle, 2-lobed; lobes divaricating, oblong-lanceolate, falcately recovered obtuse.
1 Flowering branch--3 dissected flower--3 ovary--4 legume--5 seed—copied from Roxburgh's drawing.

286. *Pseudarthria viscida* (W. & A.) diffuse, prostrate; lateral leaflets obliquely ovate, terminal one rhomboid-ovate, pubescent on the upper surface, when old shortly villous on the under: racemes filiform, elongated: bracteas subulate: legumes 3-4-seeded, 3-4 times longer than broad.
1 A branch in flower and fruit--2 a flower--3 stamens and ovary—4 calyx--5 stamens 6 anthers--7 legumes opened--8 seed cut longitudinally--9 the same testa removed.

287. *Cleome aspera* (Koen.) herbaceous, glabrous, rough with minute scattered prickles on both the stem and leaves: leaves trifoliolate; leaflets oblong, many times longer than the petiole: stamens 6: siliqua terete, torulose, glabrous, attenuated at the base, but quite sessile, acuminated with the subulate style: torus inconspicuous.—*a*; leaflets obtuse or slightly acute.
1 Plant *natural size.*

288. *Trianthema obcordata* (Roxb.) perennial; stems diffuse, prostrate, slightly pubescent on the upper side: leaves, one of each pair larger and obovate or obcordate, the other smaller and oblong: flowers solitary, sessile, nearly concealed within the broad sheath of the petioles: stamens 15-20: style simple: capsule 6-8-seeded; lid concave with two spreading teeth, nearly quite closed at the bottom, nut-like, and including one seed.
1 Plant *natural size*--2 a dissected flower--3 ovary--4 the same cut vertically--5 the capsule after detriscence—6-7-8 a dissected seed.

289. *Uraria Lagopoides* (DC.) suffruticose, procumbent, rooting at the joints; stems terete, pubescent: leaves simple and ternate; the terminal leaflet much the larger, roundish-ovate, sometimes emarginate at the base, obtuse, mucronate, sprinkled with a short scabrous pubescence: racemes terminal, conical-oblong, dense, very hairy: pedicels shortish, incurved at the apex, and with the calyx densely bearded: upper lip of the calyx short, the segments ovate-acuminated; lower reflexed, the segments elongated and subulate-setaceous: legume 2-jointed; joints orbicular-ovate, polisfled.
1 A flowering branch--2 flower--3 legume.

290. *Uraria Alopecuroides* (Doodia Alopecuroides Roxb. fl. Ind. 3-368,) perennial, diffuse, the tender plants clotted with small hooked bristles; leaves ternate leaflets oval obtuse racemes imbricated and resembling a flozees tail from the hairying of the calyx tracts and incurved pedicels which bend the two jointed legumes against the rachis the upper lip of the moneste and two toothed. Roxb.
1 A flowering branch 2-3 dissected calyx and legume.

291. 292. *Desmodium triflorum* (DC.) procumbent, diffuse: leaves trifoliolate; leaflets orbicular, obovate, or obcordate, more or less pubescent or hairy: stipules scariose, lanceolate; peduncles axillary, solitary or fascicled, 1-3-flowered: calyx-segments acuminated: vexillum obovate with a long claw: style bent acutely near the summit, and tumid at the angle: legume hispidly pubescent, 3-6-jointed, notched into the middle on the lower margin, even on the other: joints truncated at both ends.

293. *Desmodium quinque-angulatum* Hedysarum quinque angulatum *Roxb.* herbaceous diffuse 5 seeded hispid: leave ternate; leaflets oval downy; stipules cordate: racemes numerous: flowers paired: legumes hispid sex-jointed notched on both margins. Roxb.

Obs. In our prodromus we have united this with *tab.* 298—H. *auriculatum* R. *Desmodinm diffusum* D. C. and I believe correctly: as however Roxburgh thinks that they "differ specifically in the stipules and shape, of the leaflets, independent of their duration" (this he describes as perennial that as annual) I give bothfigures—N. B. for quinque angulare on the plate substitute quinque angulatum. Roxburgh'sspecific name.

294. *Desmodium gyrans* (DC.) suffrutescent, erect, twiggy; branches rather slender, angled, glabrous: leaves petioled, trifoliolate; leaflets narrow-oblong or oblong-lanceolate; obtuse at both ends, glabrous above, adpressed-pubescent beneath; the lateral pair very small: racemes axillary and terminal, numerous towards the top of the branches. and forming together a large panicle: bracteas broadly cordate. concave, before expansion densely imbricated over the flowers, caducous: flowers short-pedicelled: stigma elongated laterally and as if 2-cleft: legume flat, pubescent, straight on the upper margin, crenated on the lower, 10-12-jointed.
A branch in flower and fruit copied from Roxburgh's figure.

295. *Nomismia capitata* (W. & A.) petioles above the length of the leaves: leaflets nearly orbicular with a cuneate base: racemes peduncled, many-flowered, longer than the leaves, with a slender leafless and somewhat abortive young shoot springing from about the middle of the peduncle; the floriferous portion at first somewhat lax, soon becoming very flexuose twisted up and resembling a capitulus: calyx-segments long, subulate, forming a short hooked point to the flower-bud during æstivation: vexillum not striped: legume marked with numerous close parallel transverse veins, terminated by the hooked base of the style, 2-seeded.
1 A branch in flower and fruit *natural size*—2 a flower -3 the same dissected--4 stamens--5 anthers--6 ovary two seeded—7 a legume—8 the same opened seed *insitu*--9 a seed detached--10 the cotyledons, the testa removed—11 one cotyledon shewing the embryo-- all more or less magnified.

296. *Trianthema decandra* (Linn.) annual: stems diffuse, prostrate, glabrous or pubescent on the upper side: leaves elliptic, obtuse or acute, petioled, one of each pair a little larger than the other: flowers several, pedicelled on a short peduncle, accompanied with scariose bracteas and bracteoles: sepals membranaceous on the margin: stamens 10-12: style bipartite: capsule 4-seeded, with a spurious dissepiment; lid slightly 2-lobed at the apex, nearly closed below, nut-like, and containing 2 seeds.
1 Flowering branch *natural size*--2 a flower forcibly expanded—3 ovary--4 stamen--5 ovary cut transversely--6 ovary cut vertically—7 a capsule cut vertically--8 cut transversely--9 a seed 10 the same cut vertically shewing the embryo curved round the farinacous albumen.

297. *Ormacarpum sennoides* (DC.) young shoots, petioles, peduncles, and calyx, covered with soft glutinous hairs: leaves unequally pinnated; leaflets alternate, 4-6 pair, obovate, retuse, slightly mucronulate: calyx evidently bilabiate: stamens equally diadelphous (5 and 5): legume 2-5-jointed: joints striated, armed with minute prickly warts.
1 A branch in flower and fruit--2 adissected flower, copied from Roxburgh's drawing.

298. *Desmodinm diffusum* (DC.) herbaceous, procumbent, diffuse, branched: branches 4-5-angled, hispidly pubescent: leaves trifoliolate; leaflets oval, pubescent on bothsides: stipules large, foliaceous, auricled and stem-clasping: racemes terminating every branch, very long: bracteas small, lanceolate, 2-3 together: flowess in pairs or threes: legumes ascending or nearly erect, 5-6-jointed, notched on both sutures, hispid with short hooked hairs; joints orbicular, tumid in the middle when mature: seeds oval, compressed, with the hilum at one of the narrow ends.
1 branch in flower and fruit--2 a dissected flower--3 a legume—copied from Roxburgh's drawing.

No. XVI.

EXPLANATION OF PLATES.

299. *Æschynomene aspera* (Linn.:) perennial, herbaceous, erect, floating, spongy, sometimes slightly branched and diffuse, usually glabrous: leaflets 30 to 40 pairs, linear, obtuse: racemes axillary, few-flowered, the peduncles and pedicels hispid with short horizontal bristly hairs: corolla much longer than the calyx, both a little hairy: legumes long-stalked, 4-7 jointed, covered when mature with prickly tubercles on the middle of each joint, margins thickened, striated and crenulated.

1 a flowering stem—2 a dissected flower—3 a legume.

300. *Vachellia Farnesiana* (W & A.) 1 a flowering branch *natural size*—2 a flower—3 the same calyx and corolla opened to show the ovary—4 stamens—5 pollen—6 ovary cut vertically—7 cut transversely—8 legumes *natural size*—9 cut transversely--10 cut longitudinally—11 a seed—12 cut transversely 13 the cotylidons testa removed all with the exception mentioned more or less magnified.

301. *Loranthus amplexifolius* (DC.:) glabrous: branches terete: leaves opposite, sessile, orbicular or ovate, obtuse, cordate at the base, coriaceous: racemes axillary, solitary, many-flowered, erect or spreading, simple, shorter than the leaves: flowers (purple) shortly pedicelled, often drooping; bractea solitary, lateral, concave, orbicular, close to the ovary; calyx-limb cup-shaped, entire; corolla long, infundibuliform, gibbous on one side, curved; limb before expansion swollen at the base, constricted above it, oblong upwards, splitting into 5 linear, spathulate recurved unilateral segments, one of the fissures twice as long as the others: filaments sprinkled with minute bristles, anthers linear: berry oblong.—*Nearly allied to L. longiflorus, but distinct.*

1 A flowering branch—2 the corella split open—3 the ovary and style.

302. *Loranthus longiflorus* (Desr.) glabrous: branches terete: leaves usually opposite, or sometimes alternate, petioled, from linear to oblong-lanceolate, or ovate obtuse, upper ones sometimes retuse or slightly cordate at the base, coriaceous: racemes axillary, solitary or in pairs, erect or spreading, simple, many-flowered, much shorter than the leaves; flowers (yellow) shortly pedicelled, often drooping; bractea solitary concave, oblique, close to the ovary; calyx-limb entire: corolla long, infundibuliform, gibbous on one side, curved; limb before expansion swollen at the base constricted above it, oblong upwards, splitting into 5, linear, recurved, secund segments, one of the fissures twice as deep as the others: filaments sprinkled with short bristles: anthers linear: fruit oblong (red when ripe)—*a variable species as regards the form of the leaves, but all distinguished by the contracted throat of the corolla.*

1 A flowering branch—2 a dissected flower.

303. *Loranthus loniceroides* (Linn.) glabrous: branches terete, young ones slightly 2-edged: leaves opposite, petioled, ovate, or oblong-lanceolate, acuminated: peduncles opposite, axillary, solitary, about equal to the petiole, bearing at the apex a few and somewhat capitate or several and more or less spiked sessile flowers: bracteas 3 at the base of each ovary, roundish, acute, concave: margin of the calyx between tubular and cup-shaped entire: corolla elongated, tubular, curved, slightly gibbous on one side, several times longer than the ovary and calyx, equally cleft into 6 (or sometimes 5) cuneate—linear spreading lobes: anthers linear.

1 A flowering branch—2 a dissected flower—3 bracteas calyx and style.

304. *Loranthus capitellatus* (W. & A.) glabrous: branches terete, young shoots compressed and two-edged; leaves opposite, oblong lanceolate, obtuse, attenuated at the base into a short petiole: petiole sharply keeled at the back; flowers sessile, capitate, few together, each with three roundish acute concave bracteas at the base: heads axillary, sessile: limb of the calyx between tubular and cup-shaped, entire: flower-buds gibbous and nearly terete at the base, 6 angled upwards: corolla-tube short infundibuliform, about a half longer than the ovary and calyx: limb cleft into 6 equal cuneate, linear spreading segments as long as the tube.

1 Flowering branch—2 a dissected flower—3 calyx and ovary, the calyx partially removed to show the ovary.

305. *Loranthus Candolleanus* (W. & A.) when young all over greyish with very short starry pubescence: branches terete: leaves alternate or fascicled in pairs, narrow-oblong, or obovate obtuse, cuneate at the base, petioled, at length nearly glabrous on both sides: umbels peduncled; flowers 2-5, shortly pedicelled, clothed with short tomentum: bractea about the length of the ovary and close to it, unilateral, obtuse; calyx limb 5 or several toothed: corolla tubular, gibbous on one side above the middle, curved, 5 cleft, segments unilateral, linear, one of the fissures the longest, anthers linear.

Obs. The specimen figured differs somewhat from those originally described, but not sufficiently to constitute it a distinct species—the species is very nearly allied to L. tomentosus from which it principally differs in the size of the bractea, a point which I shall illustrate in my figure of the latter species.

1 A flowering branch—2 the corolla split open—3 the ovary crowned by the calyx with its bractea.

306. *Loranthus lageniferus* (R. W.) glabrous branches terete, leaves opposite, petioled, elliptic—oblong, obtuse, rounded at the base, peduncles fascicled leaving at the apex a large, companulate 4-5 lobed involucrum: flowers 4-5 in the bottom of the involucrum calyx membranous repandly 5 toothed: corolla tubular pulverulent, twice the length of the involucrum, 5 cleft, annular towards the base of the segments; segments linear, reflexed, anthers erect.

Obs. This new and curious species is a native of Malabar extending as far north as Bombay from the neighbourhood of which I have specimens communicated by the late Mr. Graham.

1 A flowering branch—2 an involucrum split open, showing the position of the flowers within—3 a corolla split open.

307. *Hedera trifoliata* (W. & A.) shrubby, unarmed, glabrous: leaves pinnately trifoliolate; leaflets ovate with a narrow acumination, equal and slightly acute at the base, somewhat closely bristle-serrated, scarcely coriaceous, petioled; terminal petiole 4-5 times longer than the others: panicle corymbiform, bracteated; flowers umbellate, numerous on each umbel: calyx 5 toothed: corolla calyptriform, ovoid: stamens 5: styles united into one: berry 5 celled.

1 Flowering branch—2 an unexpanded flower—3 the ovary and stamens after the separation of the corolla—4 the calyptriform or lid-like corolla detached.

308. *Ionidum suffruticosum* (Ging.) stems pubescent, branched near the base; branches nearly simple: lower leaves the broader, upper ones oblong-lanceolate, mucronate, more or less pubescent, toothed or serrated, stipules subulate: sepals narrow, acuminated, strongly keeled: lower petal nearly orbicular, obtuse, long unguiculate, capsule nearly globose; seeds 9, obovoid, shining (whitish) longitudinally furrowed.

Obs. The form published under this name in the Illustrations is more justly referable to *I. enneaspermum* on which account I have given this figure of the normal form. Perhaps they are only varieties of one species.

1 A flowering plant—2 a flower partially dissected--3 the capsule after dehiscence—4 the same cut transversely before dehiscence.

309. *Stylocoryne Webera.* (A. Rich.) shrubby, glabrous: leaves lanceolate-oblong, shining: corymbs trichotomous, terminal: calyx limb 5 cleft: tube of the corolla short, about twice the length of the calyx-tube, slightly widened and bearded at the mouth; segments of the limb recurved, oblong, villous at their base along the middle, about twice as long as the tube: style slightly hairy; stigma with 10 longitudinal somewhat winged angles: berry 2 celled, with 4-8 seeds in each cell.

1 Flowering branch—2 calyx divided and thrown to one side to show the style and inferior ovary—3 the corolla opened to show the hairy throat and insertion of the stamens—4 a berry cut transversely.

310. *Griffithia fragrans* (W. & A.) This being only the species of the genus no specific character can be given. The full generic character is given in our Prodromus. This figure is exceedingly characteristic of the plant as it appears in a dry and poor soil, but the section of the fruit fig-4 is most incorrect a circumstance unhappily overlooked until too late for remedy--A full and correct analysis of the generic character will be given in the next number in connection with some few other allied genera.

311. *Corchorus capsularis* (Linn.) annual: leaves oblong, acuminated: capsules globose, truncated, wrinkled and muricated, 5 celled; seeds few in each cell, without transverse septa.

1 Flowering branch with a capsule in the fork—2 a flower fully expanded—3 a stamen—4 the capsules cut transversely.

312. *Hedyotis racemosa* (Lam.) annual or biennial, diffuse, glabrous: leaves elliptic oblong, or lanceolate, obtuse or acute, attenuated at the base: flowers pedicelled, disposed in long-peduncled naked alternate--axillary and terminal racemes; the partial peduncles 1-3 flowered: limb of the calyx 4-partite; segments triangular-ovate, acute, in fruit distant with the sinus wide: capsule shortly turbinate, slightly marked with 4 acute decurrent angles.

1 Portion of a plant *natural size*--2 ovary and calyx—the corolla detached and split open to show the hairy throat and insertion of the stamens—3 ovary cut transversely *all magnified.*

313. *Indigofera linifolia* (Retz.) Perennial cespitose: leaves simple: legumes globular one-seeded. Roxb.

1 Portion of a plant in flower and fruit—2 stamens—3 keel furnished with a spur on each side—4 legume opened showing the seed in situ--5 a seed--Copied from Roxburgh's drawing.

314. *Indigofera trifoliata* (Linn.) I. prostrata *Roxb.* Perennial: leaves ternate; leaflets wedge-shaped, with glandular dots: racemes axillary, sessile, the length of the petioles: legumes reflexed, smooth, acute, from 6-8 seeded. Roxb.

1 Portion of a plant natural size--2 calyx opened to shew the ovary and detached stamen--3 united stamens--4 keel of the corolla with its lateral spurs--5 a legume opened—Copied from Roxburgh's drawing.

315. *Indigofera trita* (Linn.) annual and biennial, erect, rigid: leaves ternate, leaflets obovate: racemes, axillary, sessile, many-flowered, legumes reflexed, straight, rigid, 4 sided, spinous, pointed, smooth. Roxb.

1 Flowering branch—2 calyx split open showing the ovary and detached stamen--3 united stamens—4 keel of the corolla spurred on each side--5 a legume—copied from Roxburgh's drawing.

316. *Indigofera echinata* (Willd.) stems prostrate: leaves simple, obovate dotted: racemes axillary: legumes crescent-shaped, with hooked bristles on the convex side, one-seeded.—Roxb.

1 Portion of a plant in flower and fruit—2 keel of the corolla—4 legume opened, shewing the solitary seed. Copied from Roxburgh's drawing.

317. *Stylocoryne monosperma* (W. & A.) shrubby, glabrous; leaves lanceolate—oblong, shining: corymbs trichotomus, with rather few flowers, terminal: calyx-limb cupulate, minutely 5 toothed: tube of the corolla elongated, infundibuliform many times longer than the limb of the calyx, pubescent on the inside; segments of the limb oblong, glabrous, about half the length of the tube: ovary with 2-3 ovules in each cell: style slightly hairy; stigma acute compressed, with a furrow along each side: berry (white and about the size of a small cherry) flesh y, 1 celled, 1 seeded; seed not angled.

1 Flowering branch—2 ovary style and stigma the calyx opened—3 corolla opened and the limb removed to show more clearly the form of the anthers—4 a cluster of young fruit *natural size*—5 one of them cut transversely *magnified.*

318. *Ixora nigricans* (Br.) shrubby, glabrous: leaves oblong-lanceolate, shortly petioled, shining on both sides, turning black by drying: stipules with a subulate point: corymbs trichotomus, large, open, flowers lax; calyx segments subulate, about the length of the tube: coralla (white) with the tube (three quarters of an inch long), slightly widened upwards; lobes oblong, slightly acute, recurved: filaments shortly exserted: style glabrous, considerably exserted, divisions of the stigma filiform, recurved: berries transversely oval.

Obs. Some points of the character does not accurately correspond with the figure, which may be accounted for by the former being taken from dried specimens, the latter from the fresh plant; the divisions of the stigma do not separate at first and the mature berry is globose and purple, not unlike a small black cherry, but changes in drying.

1 A branch in flower and fruit *natural size*—2 the corolla split open —3 the ovary style and stigma.

Rungia del.

R. W. - Lith

Deva-daroo S. | Guatteria longifolia Wall. | Assokum
Asog H. | Uvaria longifolia Roxb. | Nettingum

Coromandel

Rungia del

நாய்வேளை

Nahivaylei: Tam:

Kookhi vamilie. Tel:

Polanisia icosandra (W & A.:)

Cleome viscosa L. Ainsl. Mat. Med.

R. W. Lith.

Walaba. Cyng.

Aria-veela. M.

Korka-vaivinta. S.

Rungia del — R. W. Lith

Mollugo disticha (Ser.:)

Rengia del

R. W. — L.

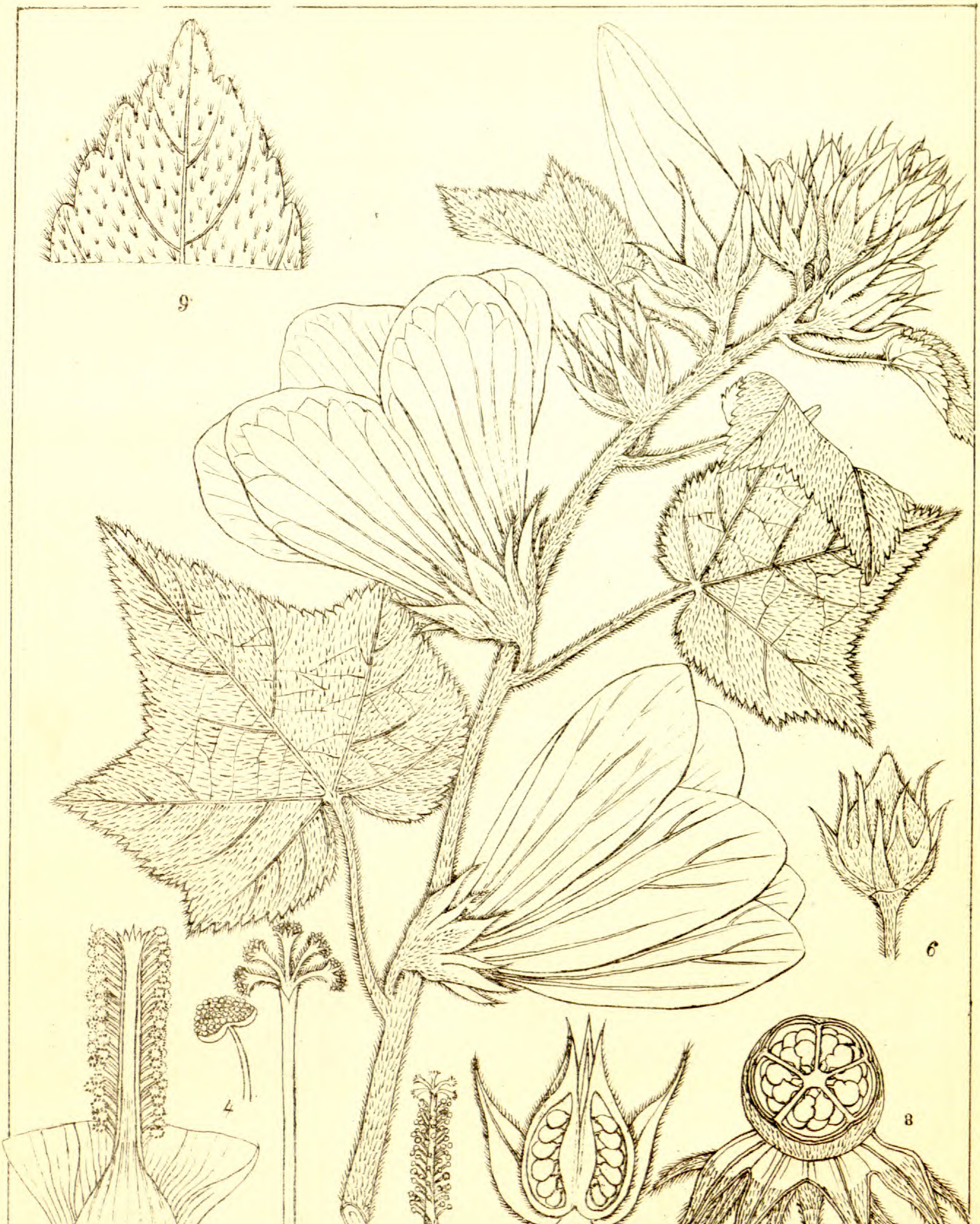
சிட்டாமுட்டி.
Sitta Moottie

Lebretonia procumbens (Wight.)

Rungia del.

R. W. Lith.

Hibiscus Lampas (Cav.:)



Rungia del. R. W. Lith.

Hibiscus lunarifolius Willd.:
H. pruriens Roxb Fl. Ind. 3 pg. 196.

Rungia del

R. W. Lith

Paritium tiliaceum (St Hil.)

Rungia del

Poorsa marum. Tam.

Ghenghranie Maunoo. Tel

Thespesia populnea (Corr.:)
Hibiscus populneus Linn.:

R. W. Lith

Sooparshavaka. S

Sooriya-gaha. Cyng.

Rungia del

R. W. Lith

வம்பருத்தி.
Vunparatie. Tam.
Karpasee. S.

Gossypium herbaceum Linn:
G. album Ham: W. & Arn:

పత్తి
Puttee. Tel.
Kapas. H.

Gossypium arboreum
From Royles Illustrations &c

Gossypium herbaceum
From Royle Illustrations &c

Runzia del. — *R. W. Lith*

துத்திஇலை — తుత్తి ఆకు.

Toottie elley. Tam — *Toottie-akoo. Tel.*

Abutilon indicum (G. Don:)

Sida indica. S. populifolia Lam.;

Country Mallow leaf.

Kristna-nimboo. S
கருவப்பிலை.
Karaway-pillay. Tam.

Bergera Koinigii (Linn.:)

Barsunga. H.
కరివేపాకు.
Karri-vaympakoo. Tel.

Clausena Willdenowii β (W. & A.)

Rungia del
விளாமரம்
Vallam maruem. T
Coattivella. Tam.

Feronia elephantum Corr.:
Wood apple tree

R. W. Lith
వెలగచెట్టు
Velaga chettoo Tel
Boheen Kavila. H.

Rungia del.
Veelvei elley. Tam.
Bilva akoo. Tel.

Ægle Marmelos Corr. Roxb.
Cratæva Marmelos Willd
Cr. religiosa Ainslie Mat Med not Vahl.

R. W. Lith
Covalam. Hort. Mal.
Vilva. Sans.

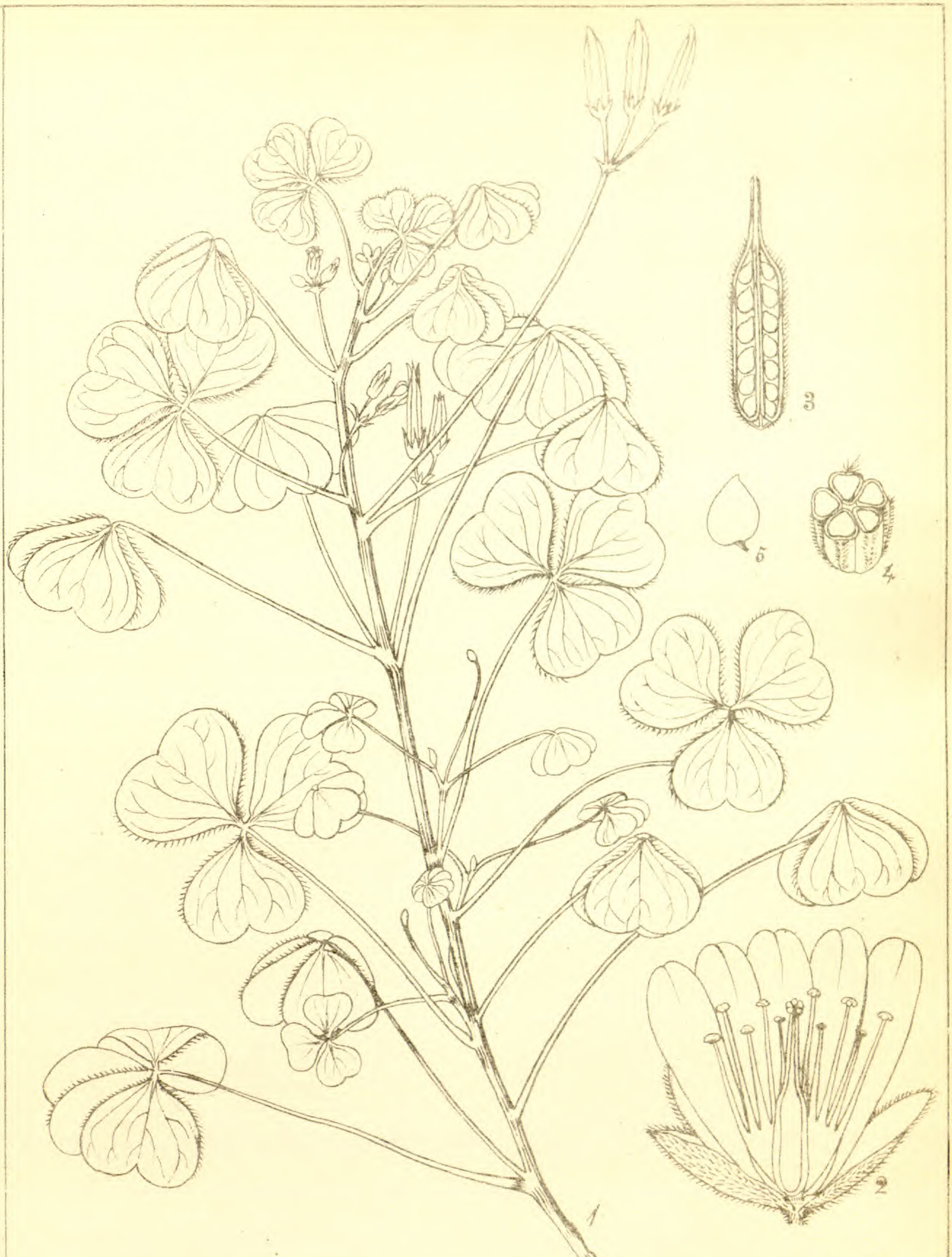
Rungia del
Paulliam lo

Azadirachta indica (Ad. de Juss.)
Melia Azadiracta Linn.;

R. W. Lith

Vaypum Marum. Tam.
Vaympa Maunos. Tel.

Tel. Kohomba. Cyng.
Nimba. S.
Aria bepou. Hn.



Pooliaray. Tam.
புளியாரை.
Aorkrika. S

Oxalis corniculata (Linn.:)
Wood sorrel

Poolie chinta. Tel
పులిచింత

Umbuti. H.

Rungia del

R. W. Lith.

Berchemia parviflora (Wall.:)

Rungia del

R. W. Lith

Chennuka. S.

Cudalei. Tam.

Cicer arietinum (Linn:)

Chinna, or Bengal gram

Kurbhury. H.

Sanighaloo. Tel

Capparis grandis (Linn.:)

Rungiah del

Trichaurus ericoides (Arn.)

R. W. Lith

Melhania abutiloides Arn.

Koi_poora_H. Nephelium rubrum

Scytalia rubra Roxb.

Koi-poora. A. R. W. — Lith

Nephelium rubrum
Scytalia rubra Roxb.
Figure reduced to 1/3^d of its original size.

Rungia del

Vateria Roxburghiana R. W.:

R. W. Lith

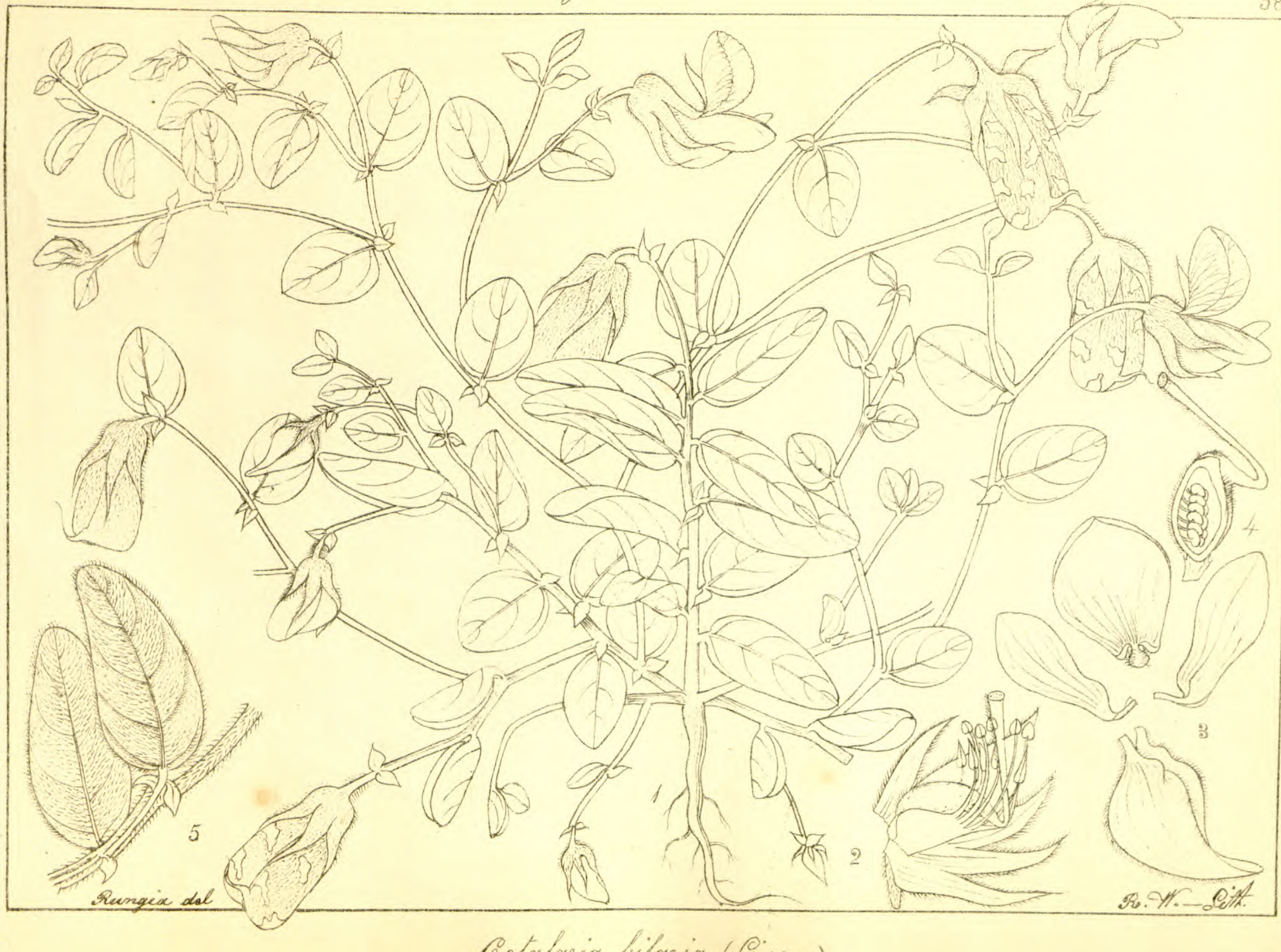
Vatica Jambugaia (W. & A.)

Rungia del.

Vitis lanceolaria (Wall.:)

R. W. — Lith.

Crotalaria speciosa (Heyne:)



Crotalaria bifaria (Linn.:)

Crotalaria evolvuloides (Wight.)

Rungia del
[illegible]
Carim-chembai Tam.

Sesbania Ægyptiaca Pers.
Æschynomene Sesban Linn.
Coronilla Sesban Willd.

R. W.—Lith
Nulla-sominttie Tel
Jait, jainti H.

Rungia del

Dunphy. Lith

ஐ ௗ௱(ந) ௰௱ா.

Abrus fruticulosus. (Herb: Madr.)

చిన్నగురుగింజ

Chinna Goorie-ghenza. T.

Coondu-munnee. Tam

Rungia del

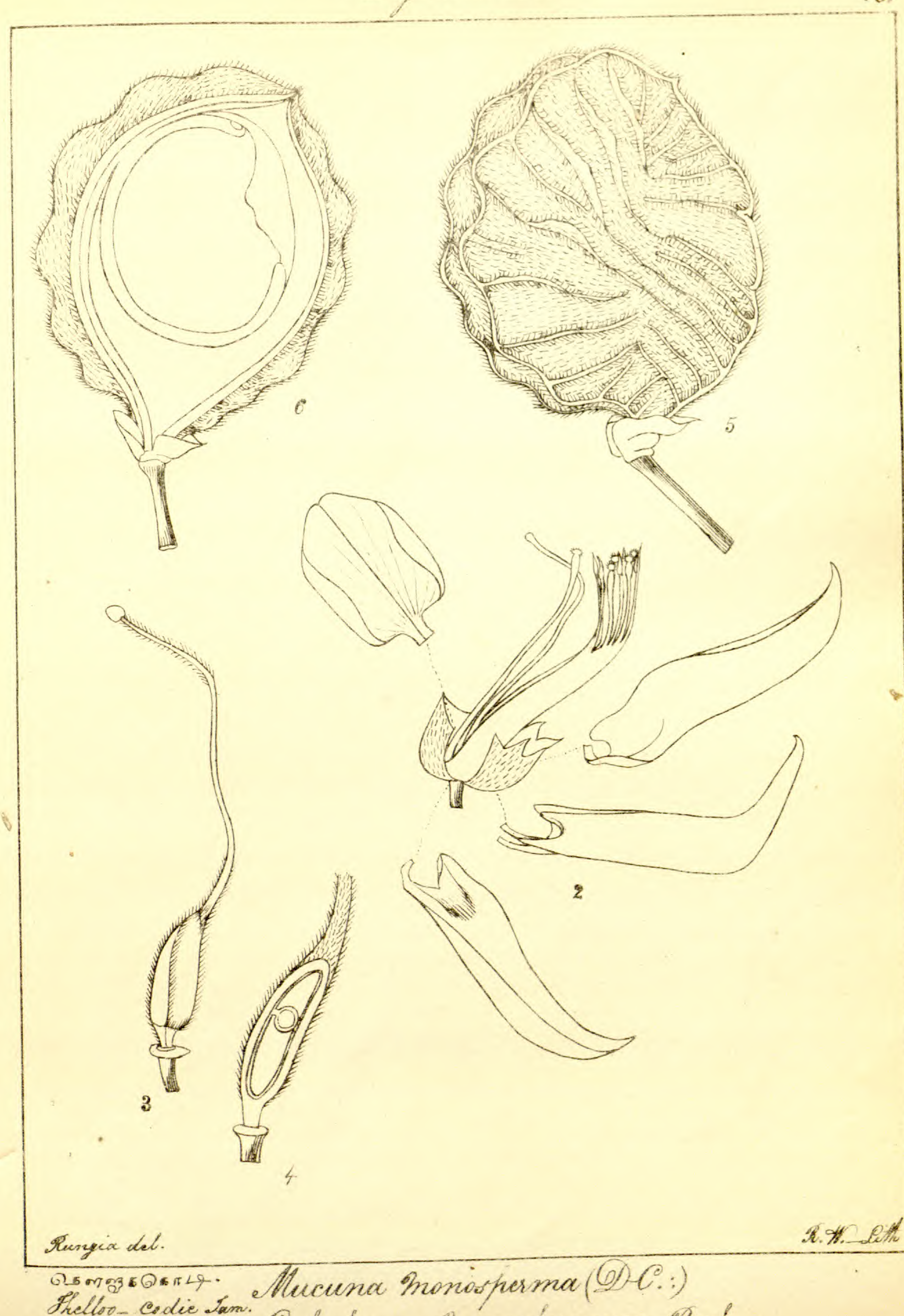
Bun-burbutee. B.

Phaseolus rostratus (Wall.:)

R. W. Lith.

Har-alsana. Tel.

தெல்லுக்கொடி
Thelloo-Codie Tam.
Mucuna monosperma (DC.:)
Carpopogon monospermum. Roxb.



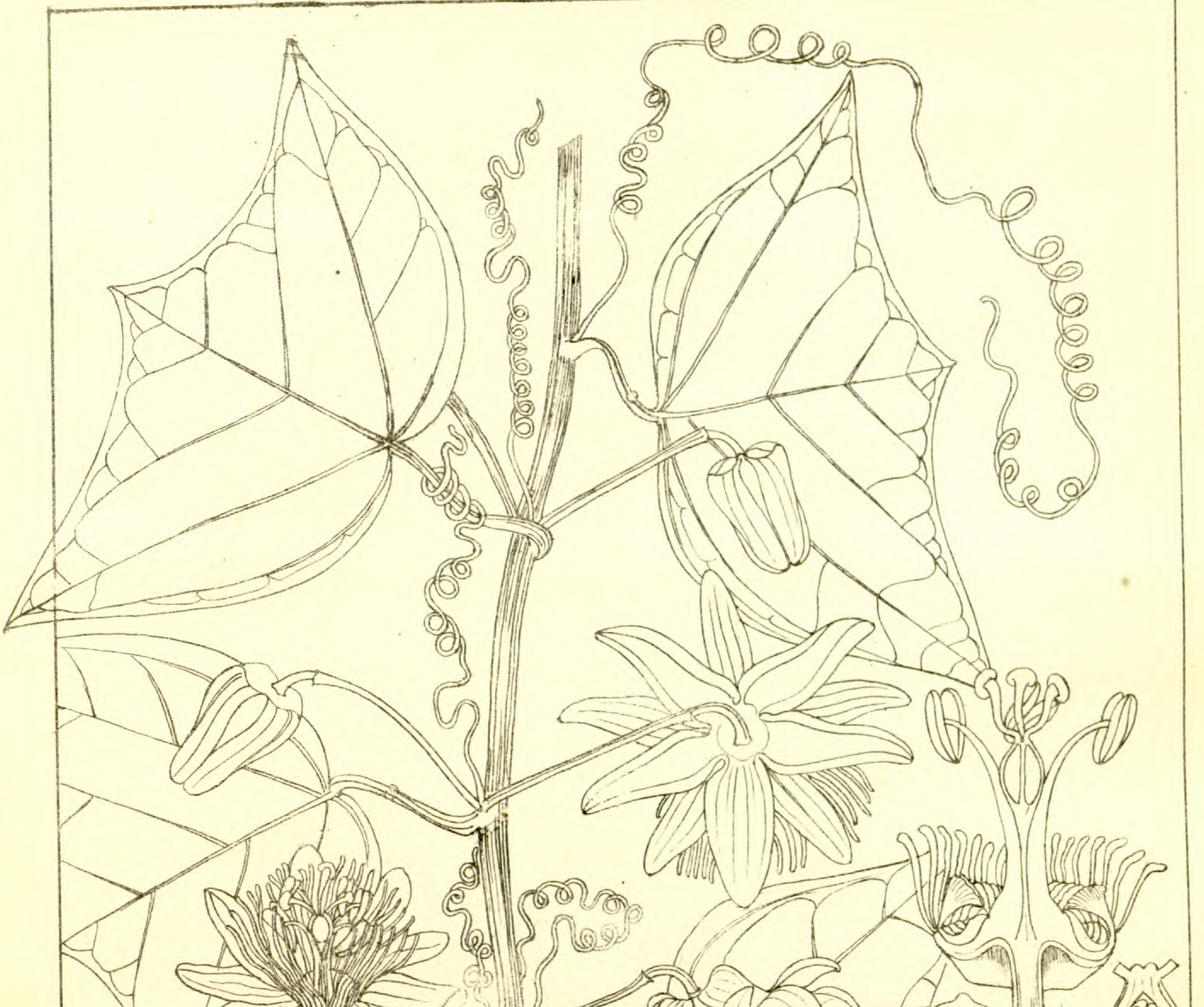
தெள்ளுக்கொடி.
Thelloo- codie Tam.

Mucuna monosperma (DC.:)
Carpopogon monospermum Roxb.

Cæsalpinia paniculata (Roxb.)

Rangiah del. R. W. – Lith

Rosa Leschenaultiana (Red. & Thor.)



Rungia del

Passiflora Leschenaultii (D.C.:)

R. W. Lith

சிலைகைப்புகு

Malay-jemcky.

Rungia del

பன்னீர்மரம்

Panneer Marum. Tam

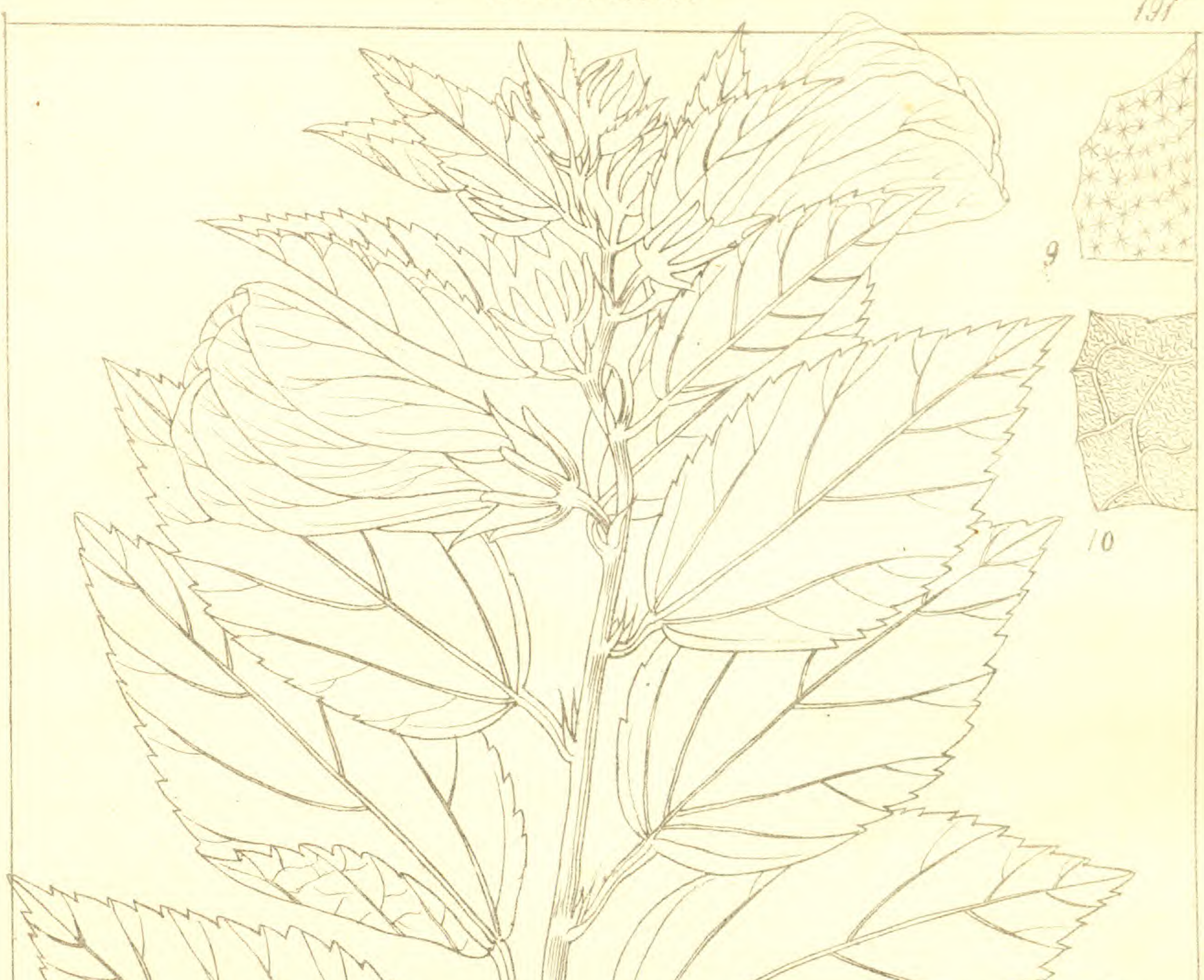
Guettarda speciosa (Linn)

Dumphy. Lith

Panneer Ka Jaad. Duk.

Panneer-Maunoo. T

Hibiscus hirtus (Linn.)



Decaschistia crotonifolia (W. & A.)

Nephelium Litchi
Scytalia Litchi Roxb

Litchi. B.

R. W. Lith

Leechee. H. B.

Grewia columnaris (Sm.)

Thoutta - Tam

[illegible]
Kichetty – Tam

Grewia rotundifolia (Juss.)

Rungia del

R. W. Lith.

Elæocarpus oblongus Gærtn.

Cleyera gymnanthera (W. & A.)

Rungia del — *G. W. Lith.*

Thalictrum glyphocarpum (W. & A.)

Ranunculus subpinnatus (W. & A.)

Gwali-lata-B. *Vitis pallida* (W & A) Marata-tiga Can.

Vitis quadrangularis (Wall.:)

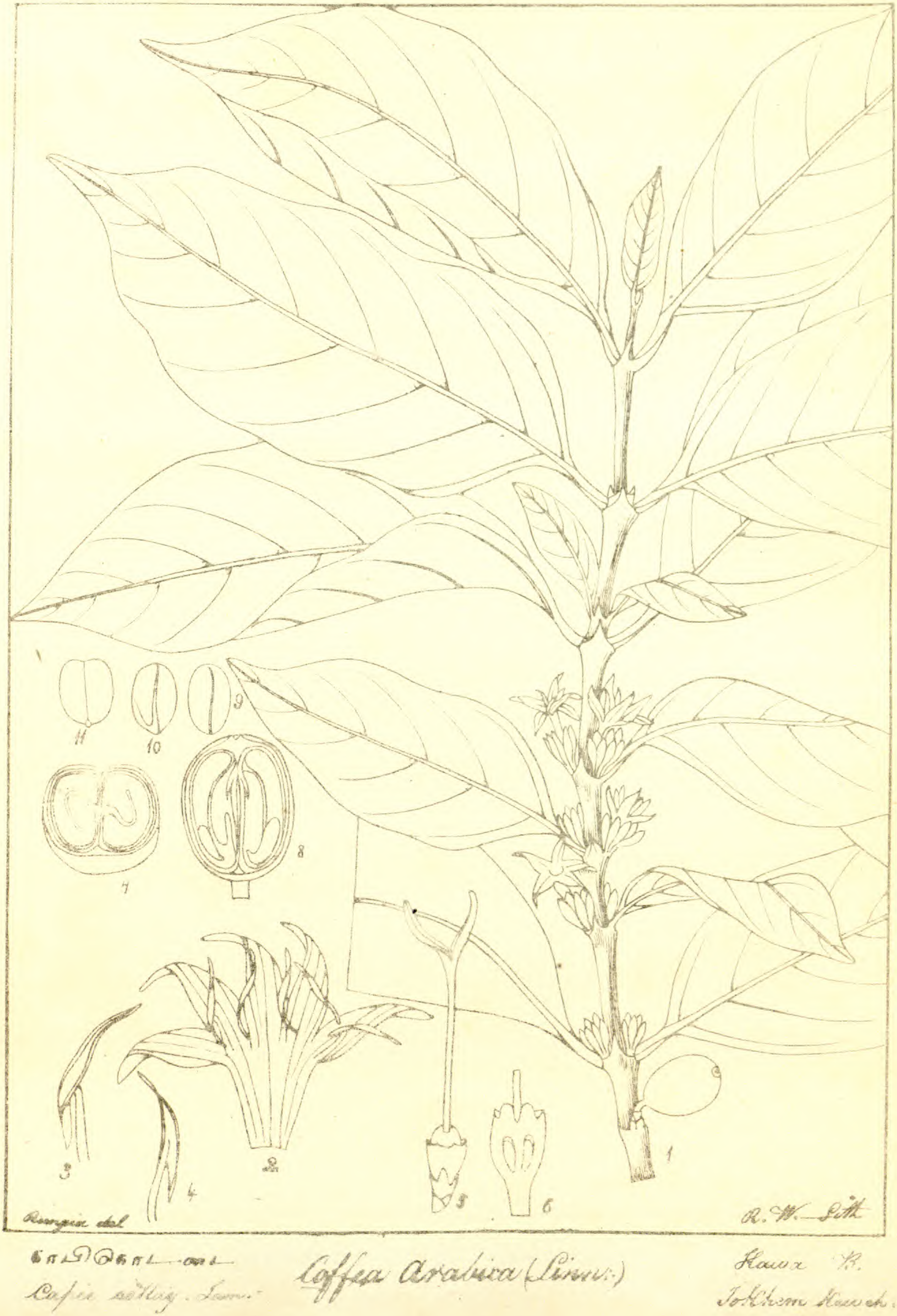
Perandie cadie. Tam.

Harjora. H.

Nulleroolingah. Tel.

Wash harrasa. Beng.

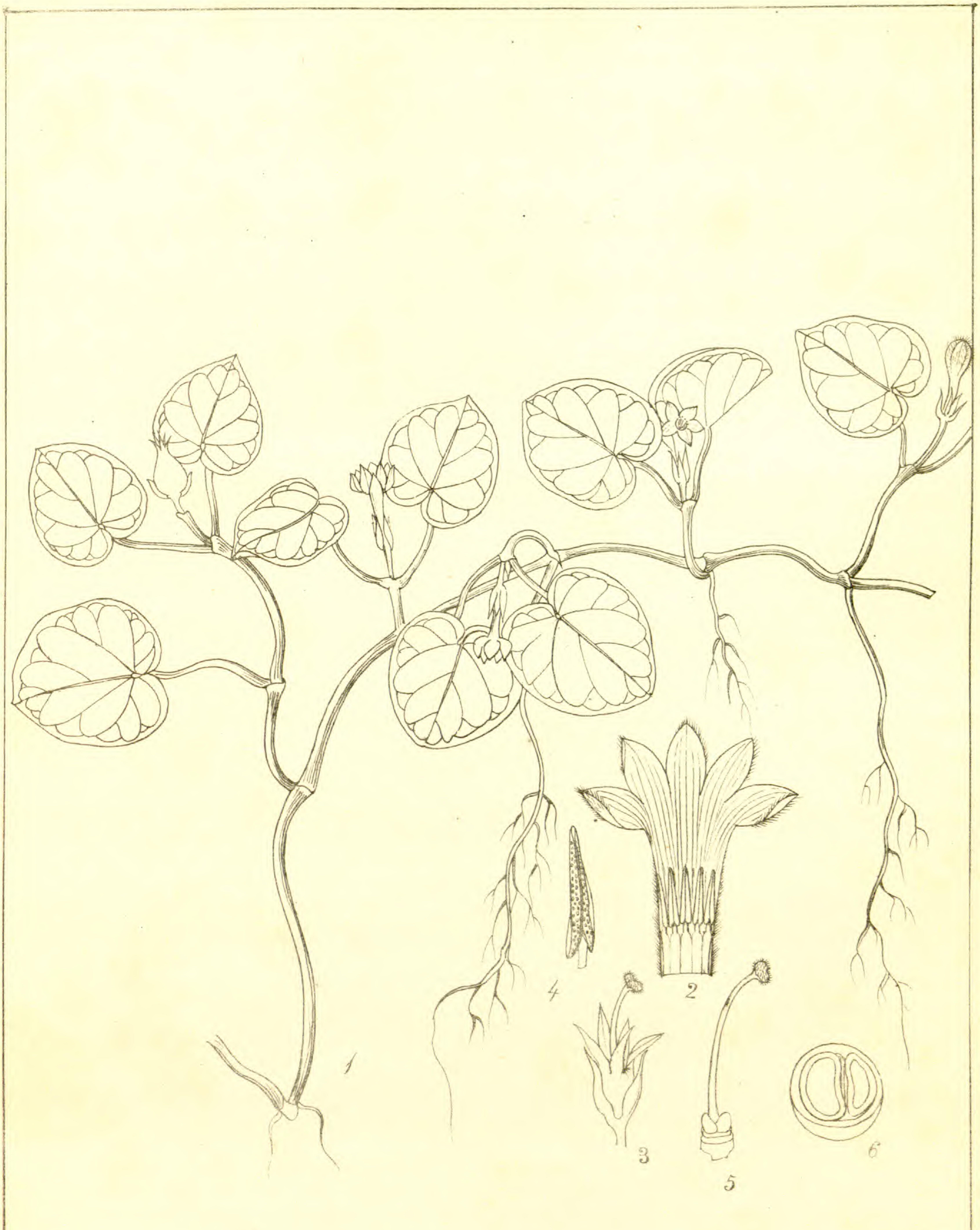
Neurocalyx Hookeriana _ R.W.



காபிகொட்டை
Cafie cottay. Tam.

Coffea arabica (Linn.)

Kawa Ar.
Tokhem Kaweh: Pers.



Rungia del

R. W. Lith

Geophila reniformis (Don.)

Salacia pomifera (Wall.)

Norysca myorensis Arn
Hypericum mysurense.

Rungia del

மொச்சைக்கொட்டை

Mutchay-cottay. Tam

Nishpāvā. Sans.

Lablab vulgaris (Savi.)

Dumphy. Lith

అనుములు

Anoomoolu. Tel.

முருக்குமரம். Moorka-marum Tam. Mundara — S.

Erythrina Indica (Lam)

Moorka Tree, or Mootchie wood.

బాడిసపచెట్టు Bhadesapa — Chettoo

Rungia del

Pongamia glabra (Vent:)

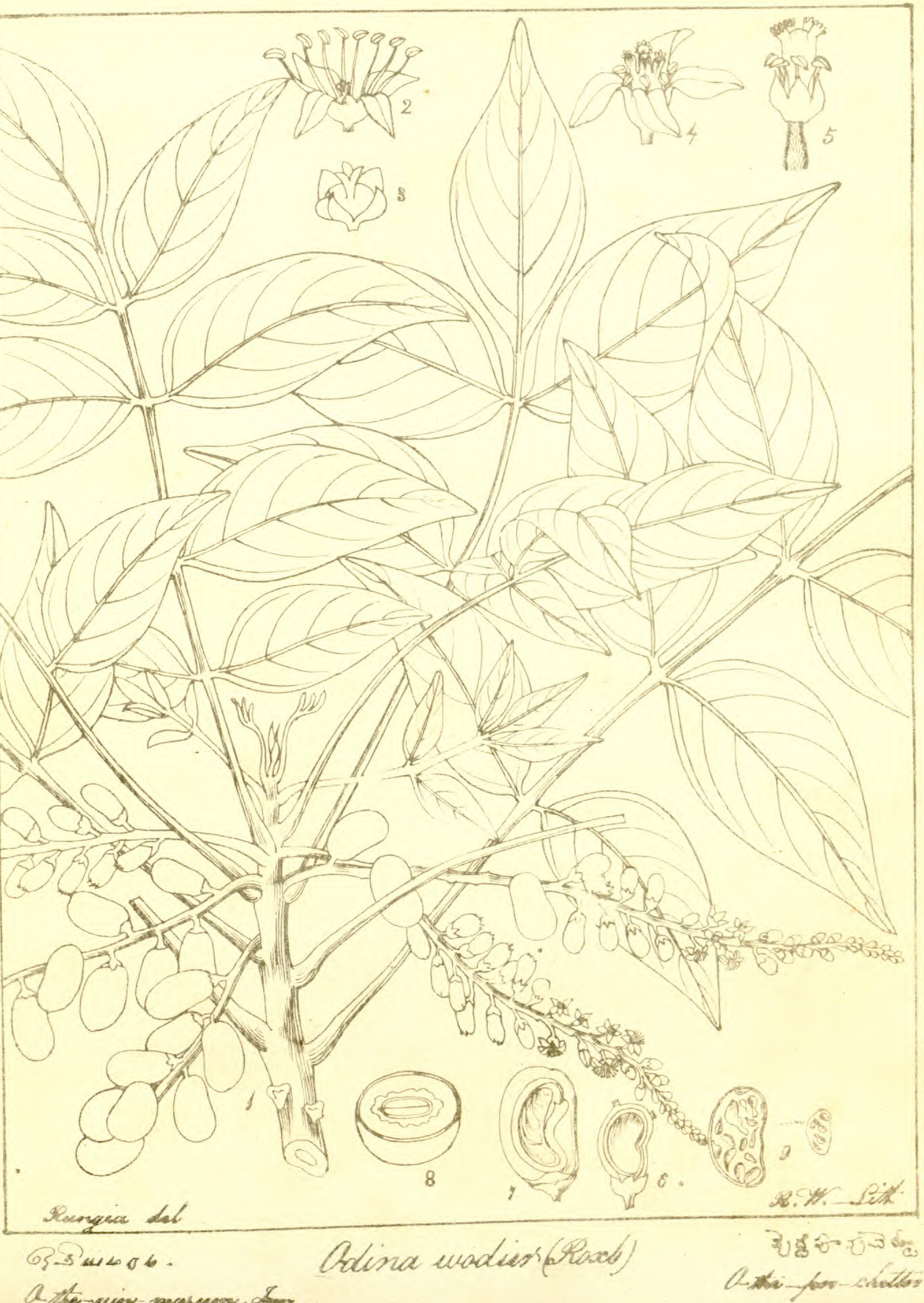
Dumphy. Lith

புங்கமரம்

Poonga marum. Tam

కానగమాను

Kanaga-maun-o. Tel



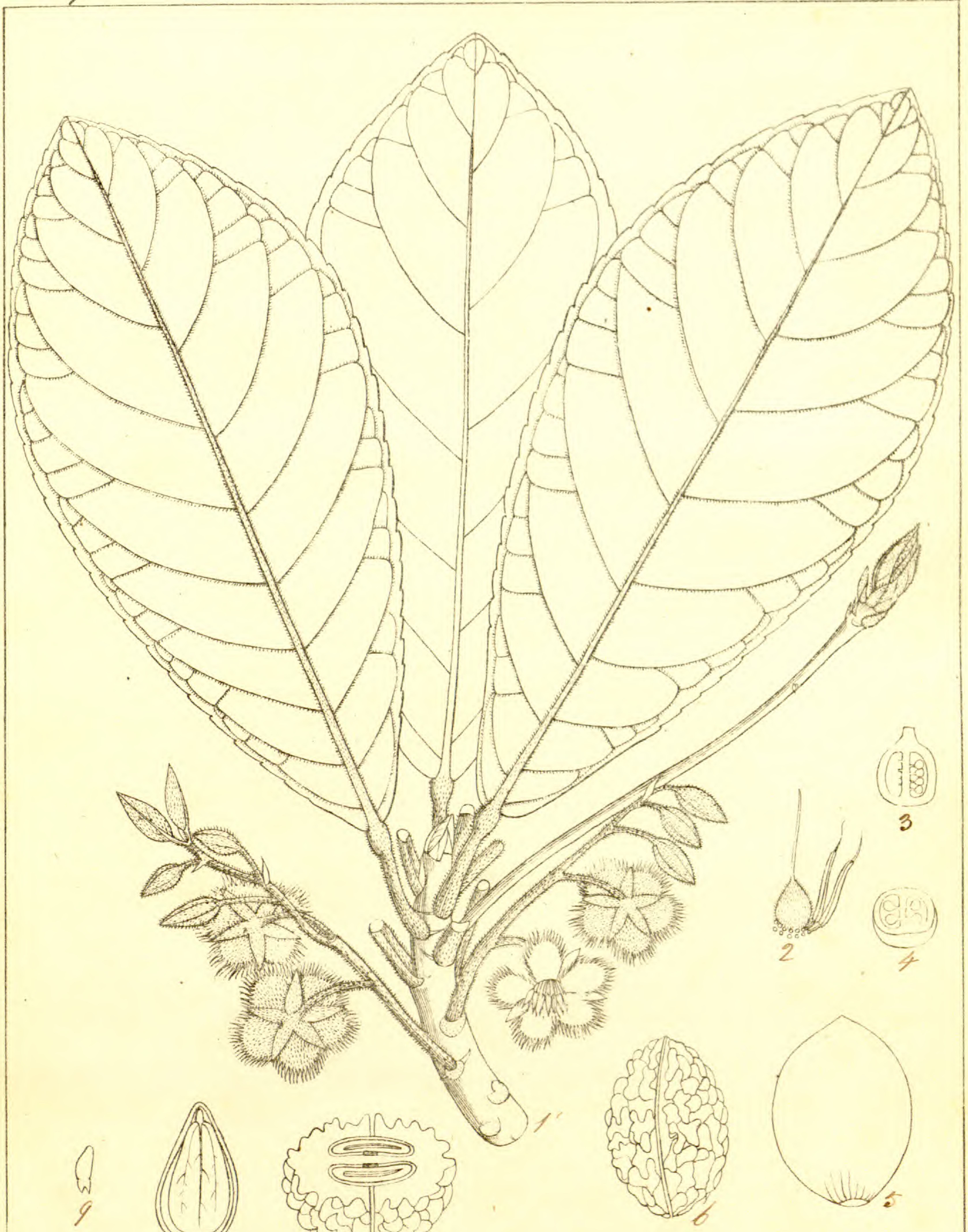
ஒதியமரம்.
O-the-yin-marum. Tam

Odina wodier (Roxb)

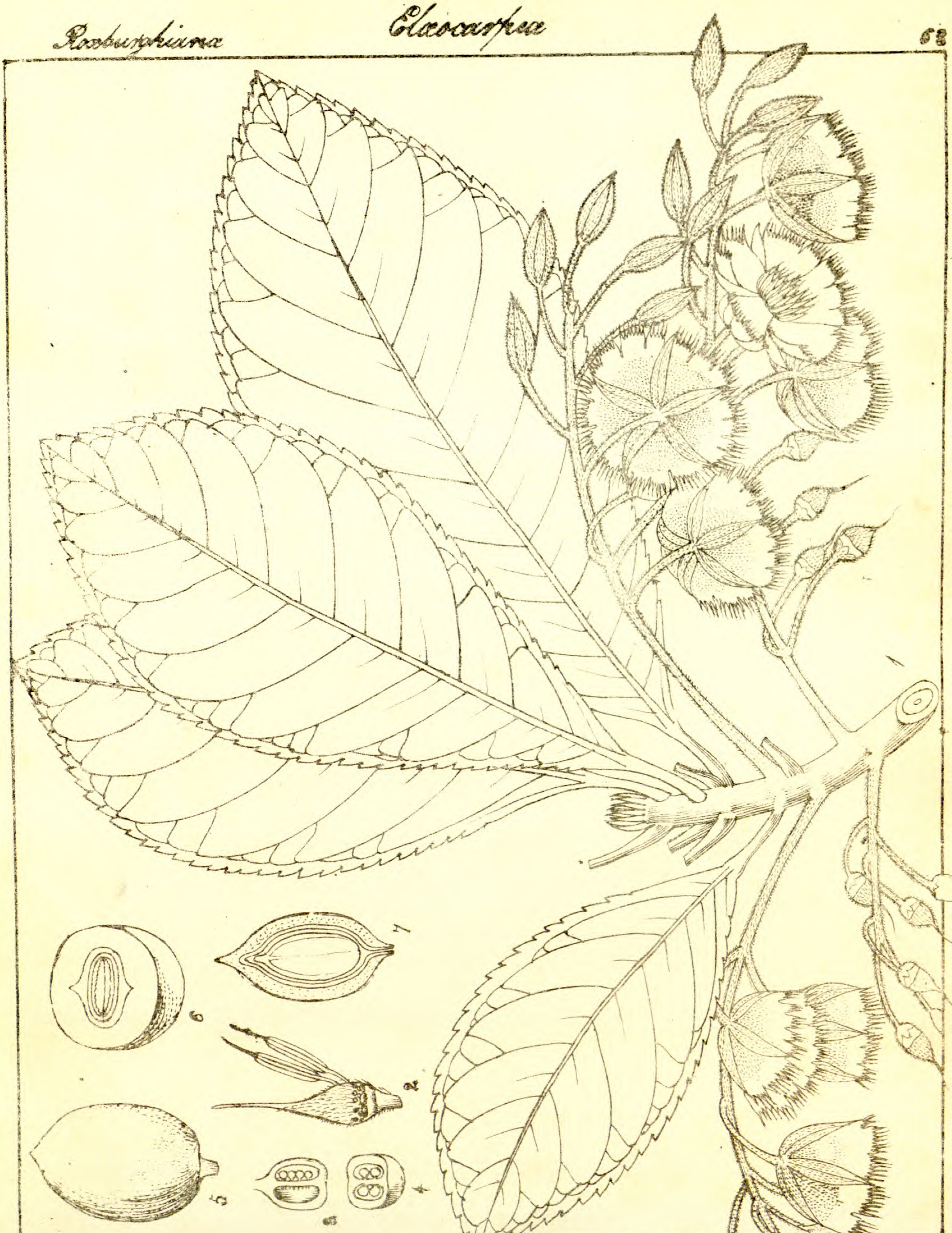
ఒద్దిపొం చెట్టు
O-thi-pon-chettoo. Tel.

Bun. julpai. B.

Monocera rugosa. R. W.
Elæocarpus rugosus. Roxb



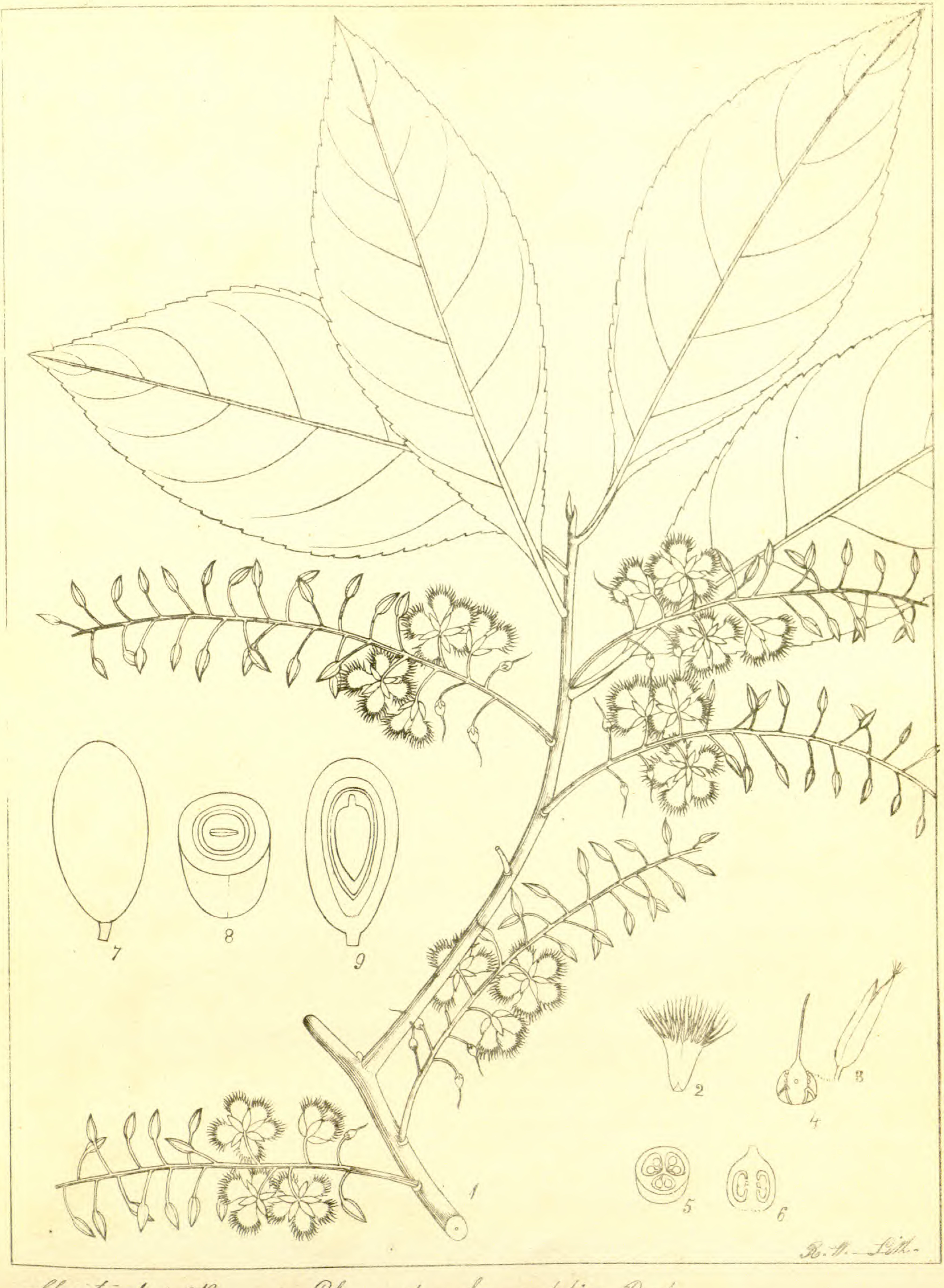
Monocera tuberculata W. & A.
Elæocarpus bilocularis
slightly reduced.



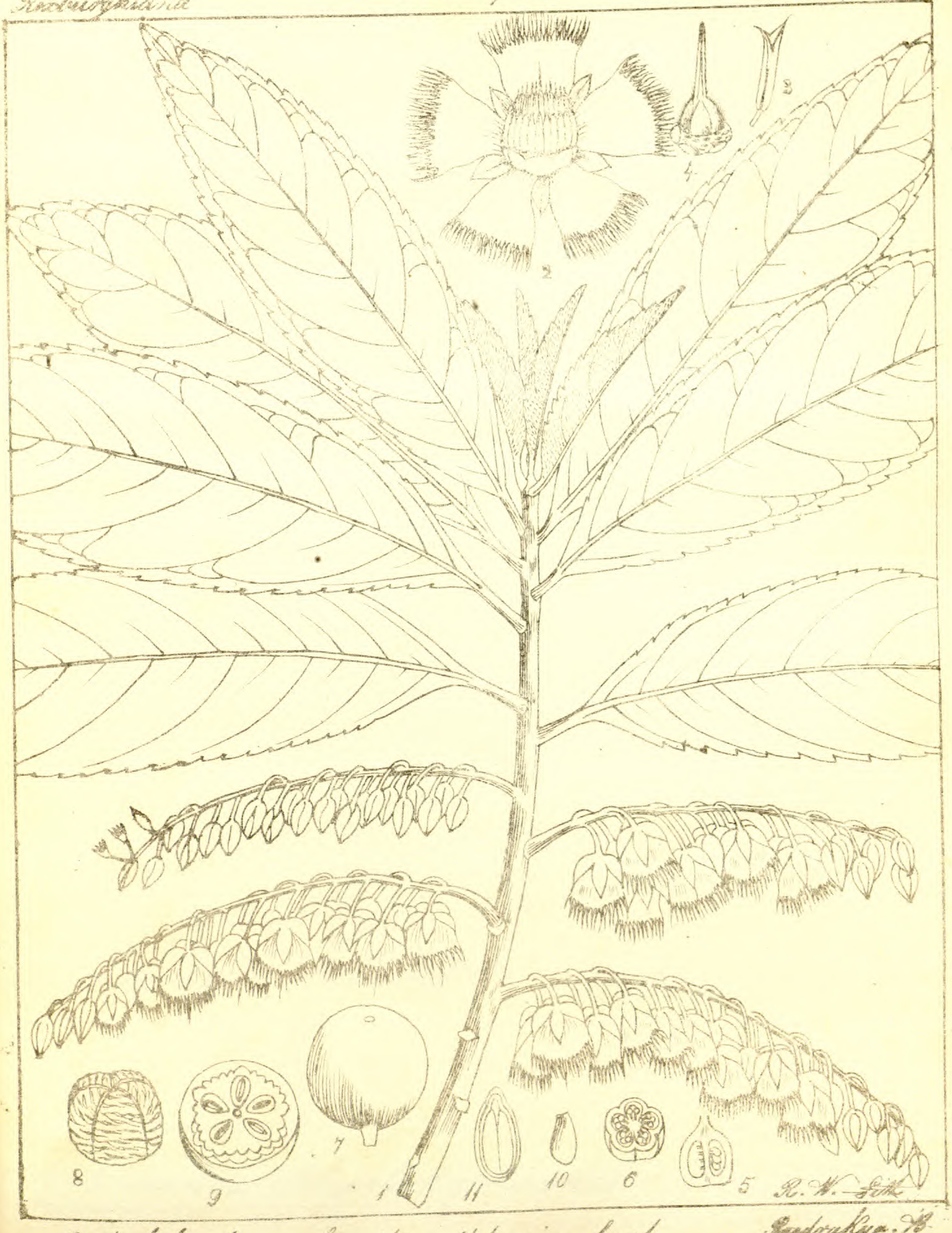
Rungdallya. Ts.   Monocera Roxburgii R. W.   R. W. Lith.

Elæocarpus Aristatus Roxb.

Dulkai. B. *Elæocarpus robustus* Roxb



Shweta-pai. B. Elæocarpus lanceæfolius Roxb



Roodraksha. S Ganitrus sphærica Gært. Rudrakya. H

Elæocarpus Ganitrus Roxb.

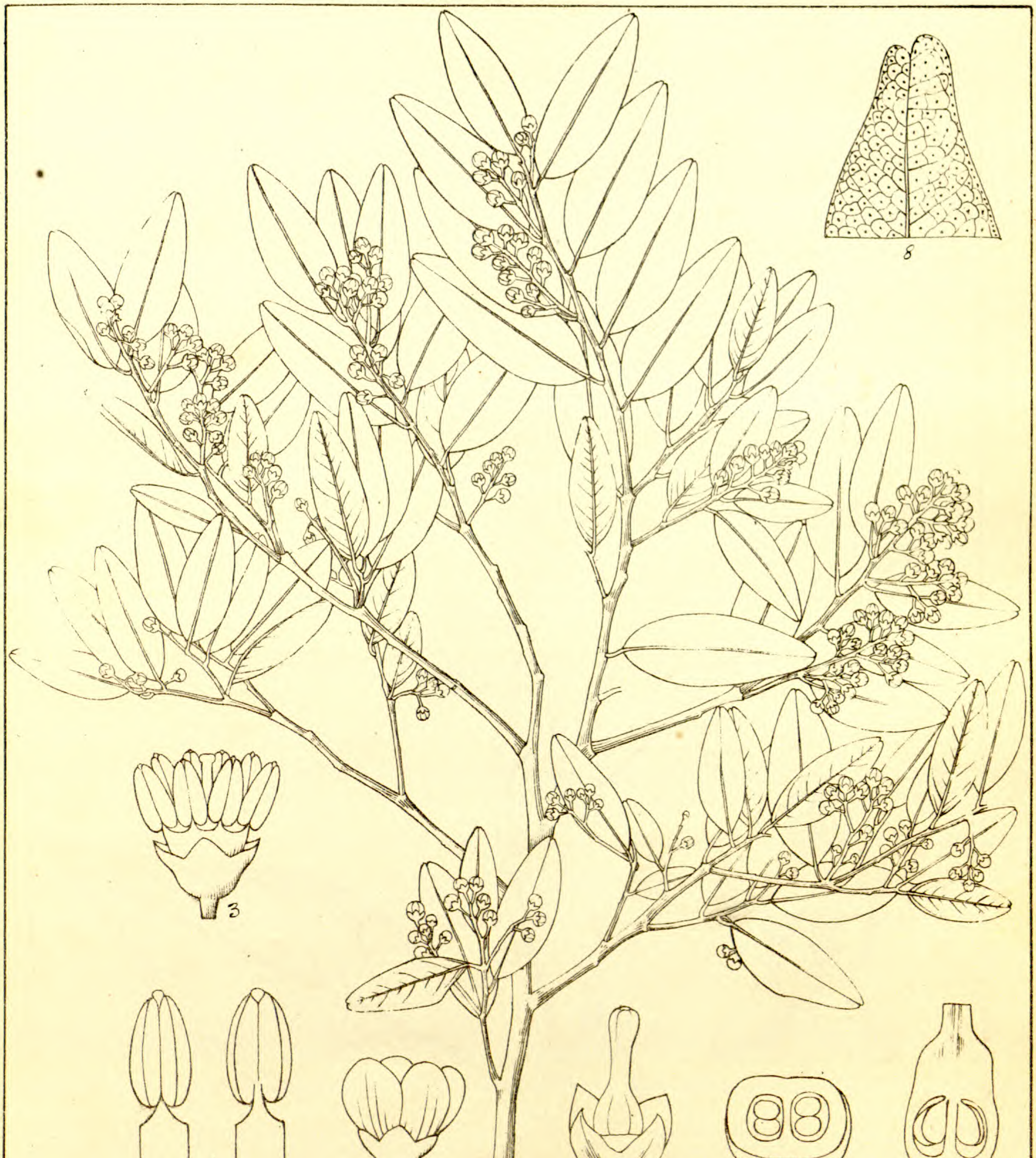
பெரியாநங்கை *Polygala Wightiana Wall.*
Pariyanunga - Tam.

Abutilon crispum (G. Don)

Rungiah del.   *Lagerstrœmia parviflora* (Roxb.)   R. W. Lith.

Chinnamanghi. Tel.

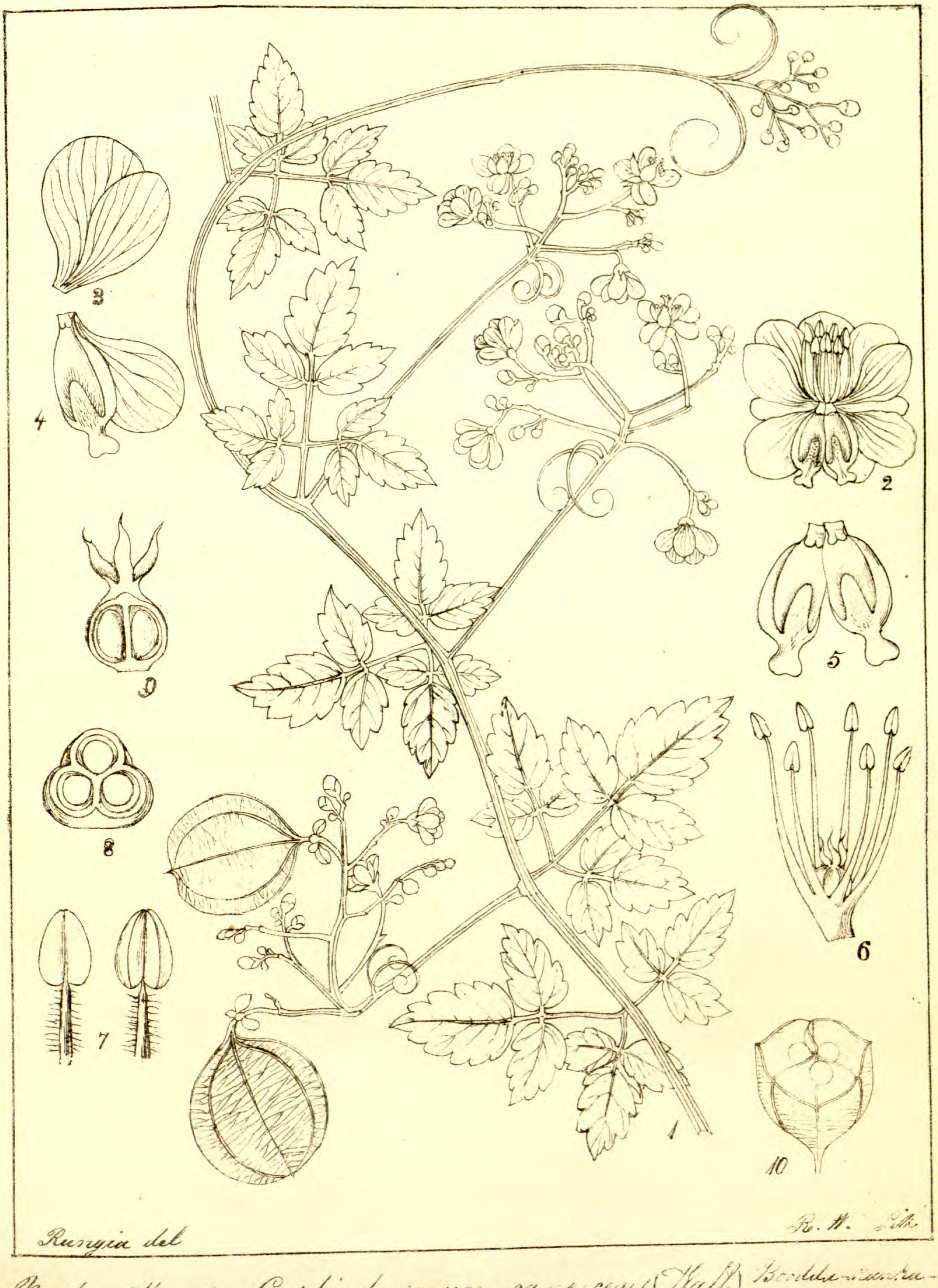
Tetracera Rheedii (D C.)



Sclerostylis atalantioides (W & A.)

Sclerostylis Roxburgii. R.W.
Amyris simplicifolia Roxb.

Syzygium zeylanicum (D.C.)



Moodа-cottan. Tam. *Cardiospermum canescens* (Wall.) Boodda-kaaka-radoo.

Ranunculus reniformis (Wall.)

Javelliki. Tel. Grewia hirsuta (Vahl.)

புன்னைமரம்.
Pinnay-marum. Tam.
Sultan-champa. H.
Tel-domba. Cyng.

Calophyllum Inophyllum (Linn.:)
Pinnay Tree.

పొన్నమాను
Ponna-maunoo. Tel
Ponna-maram. M.
Poonāgā. Sans.

Hoo-kooe-jeekwa. B. Leea Staphylea ã (Roxb.) Ancados. Tel.

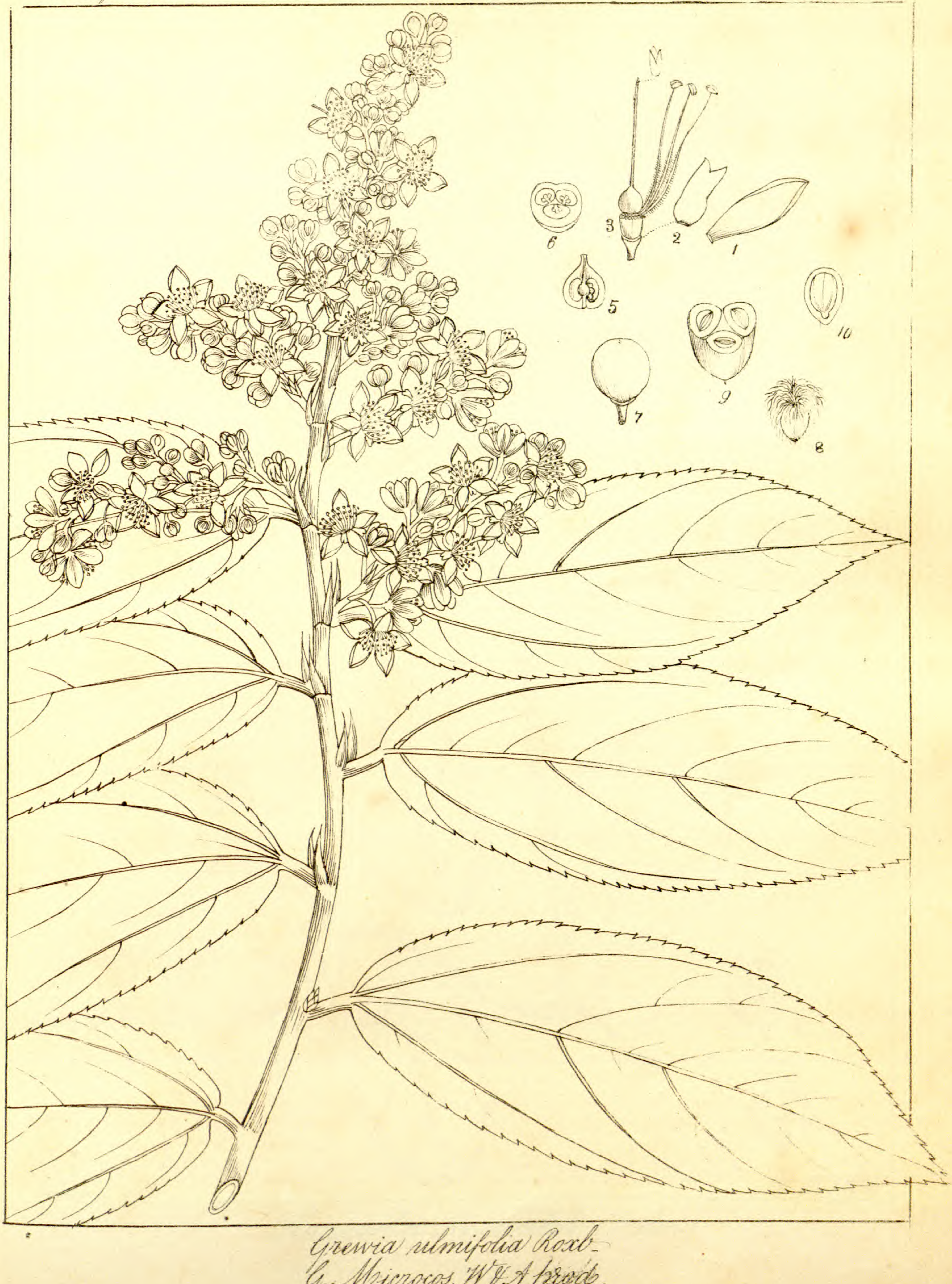
Hymenodyction excelsum Wall

Hymenodyction obovatum (Wall.)

Buchanania intermedia R.W.

Grewia oppositifolia Buch. R. W. Lith.

Grewia umbellata Roxb.



Grewia ulmifolia Roxb.
G. Microcos. W & A prod.

Runzia del

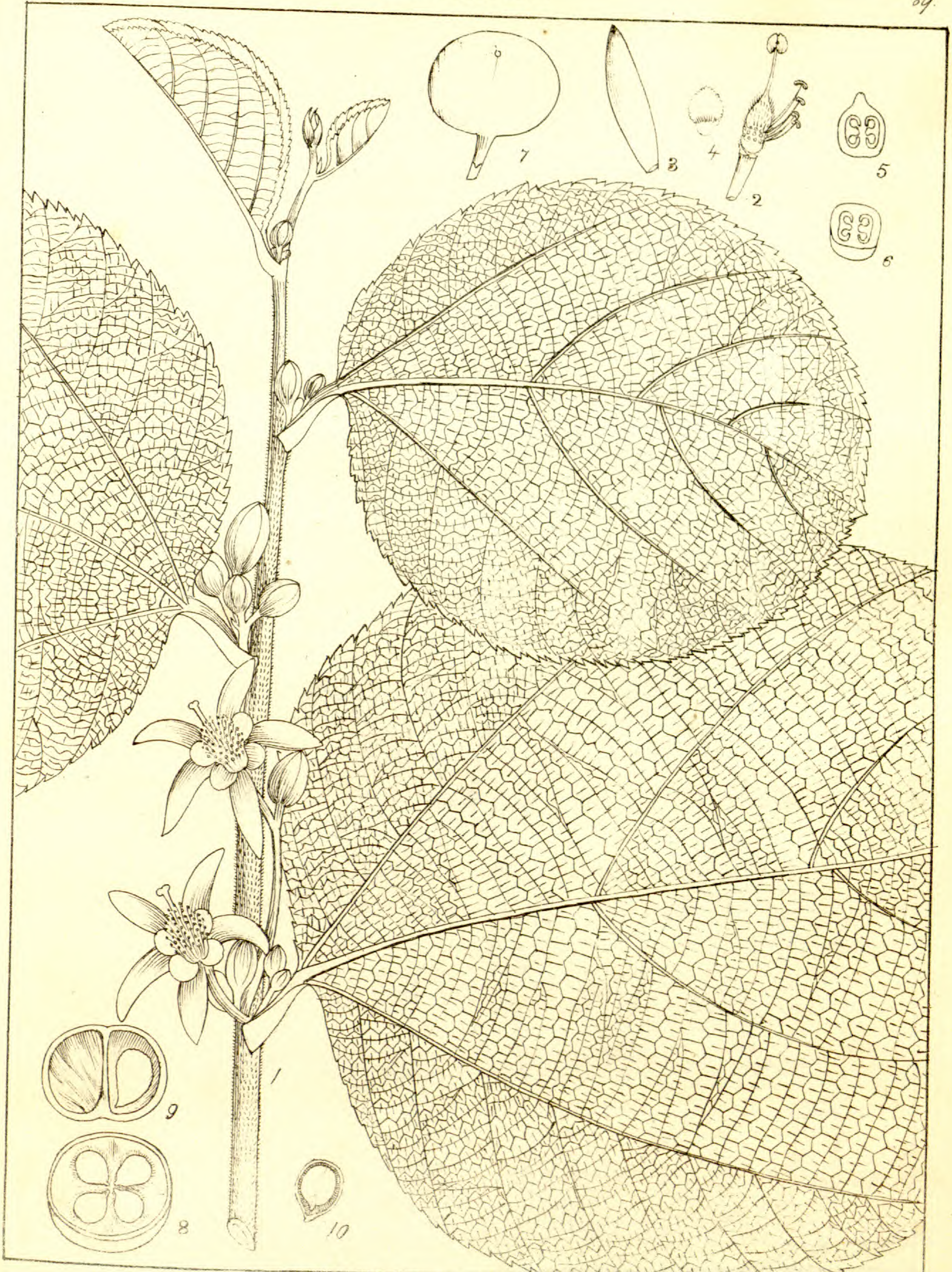
R. W. Lith

Hacourtia Ramontchi (L'Her.:)

Millettia ? piscidia (W & A)
Galedupa piscidia Roxb.

Mahara-gila. B. Dalbergia marginata (Roxb.)

Decaschistia trilobata.



Grewia sclerophylla R. M. S. S.
G. scabrophylla R. H. Ind.

Nela-naregam. Tm. Naregamia alata (W. & A.)

Rungia del

Munronia pumila (R. W.)
Melia pumila Moon.

බිංකොහොඹ
Bin-kohomba. Cyng.

H. De. Alwis. del *Alysicarpus Belgaumensis*

H. De. Alwis del.

Atylosia Lawii (R. W.)

R. W. Lith.

Phaseolus trilobus (Ait)

நரிப்பயற்றங்காய.

Nerre-pytheinzai (Tam.)

සිරිවැඩිබබිල

sirivadi-babila-Sing.

Sida acuta (Burm.)

A. D. Alwis del

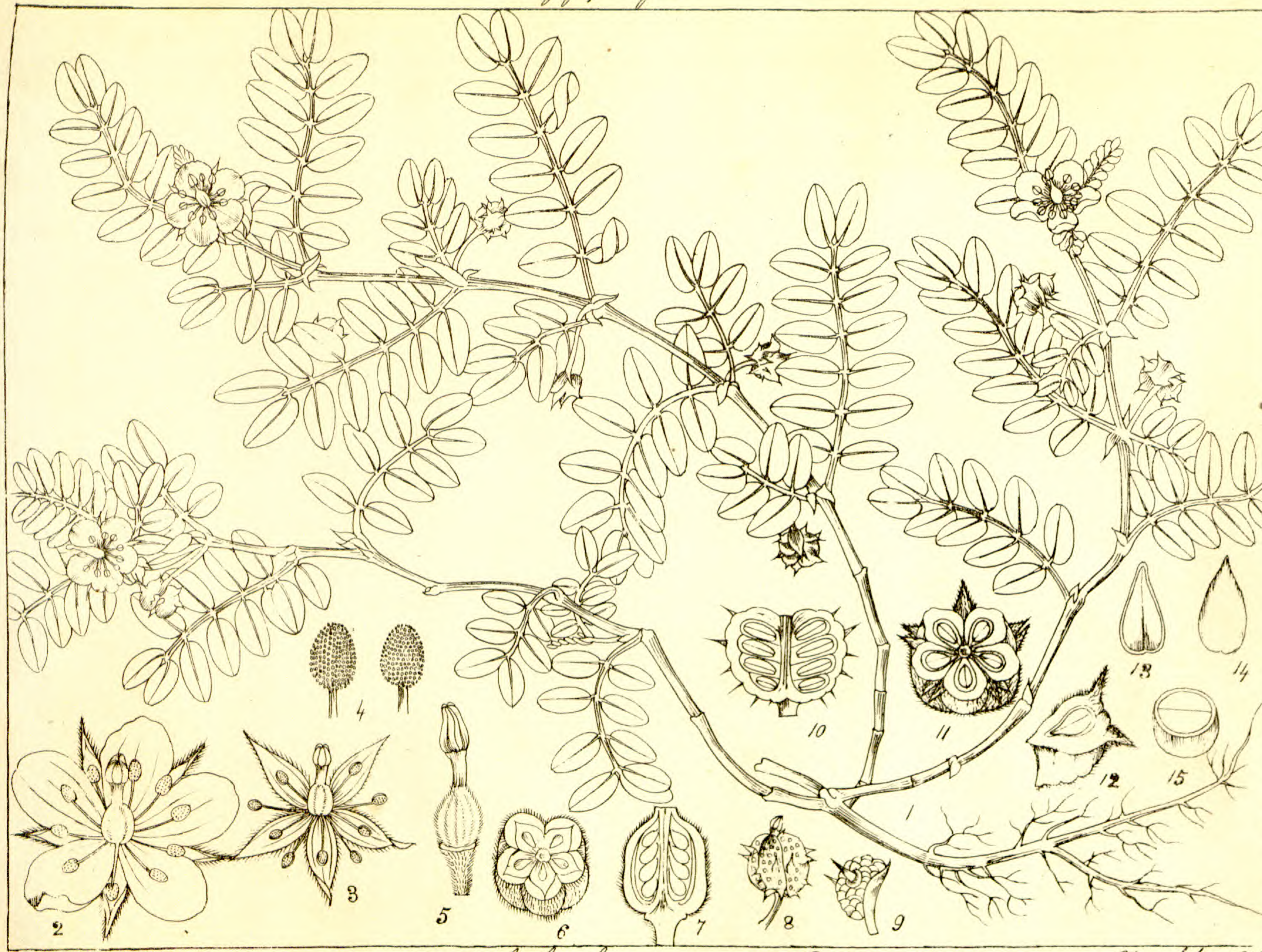
R. W. — Lith.

Murraya exotica (Linn)

Rungia del.

Sethia oblonga (Wall.)

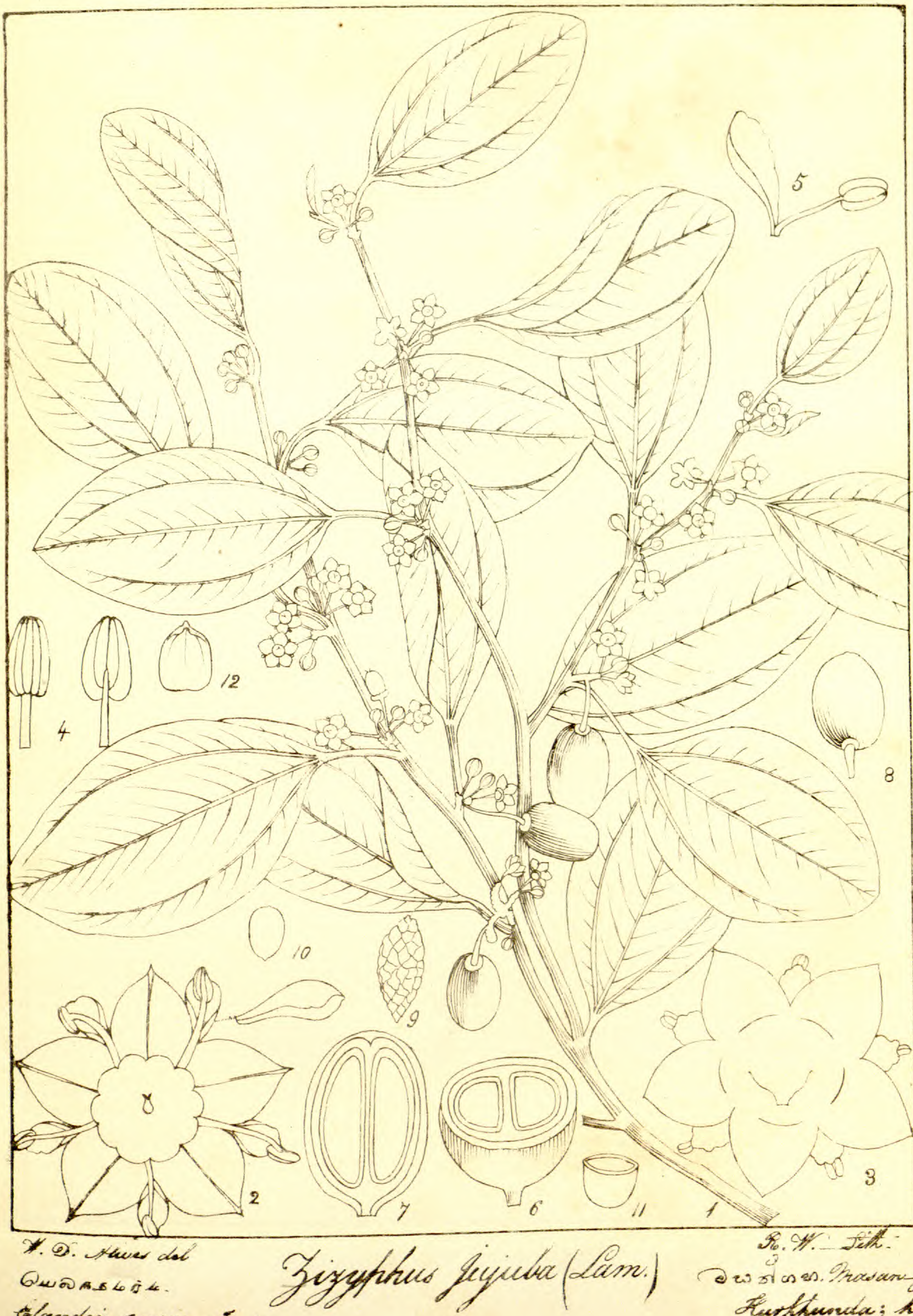
R. W. Lith.



W. D. Alwis del.
සෙම්බු නෙරිඤ්චි
Sembo-Narinchi. Cyng.
நெருஞ்சி.
Naringhi. Tam

Tribulus lanuginosus (Linn.)

Dumphy. Lith
పల్లేరు
Pullaroo. Tel
Gokhoorka H
Goo. Khyoor. B



W. D. Alwis del

இலந்தைமரம்.

Elandai-marum. Tam.

[illegible]. Reygho-chettu. T.

Zizyphus Jujuba (Lam.)

R. W. Lith.

මසන්ගස. Masan-gaha. Cing.

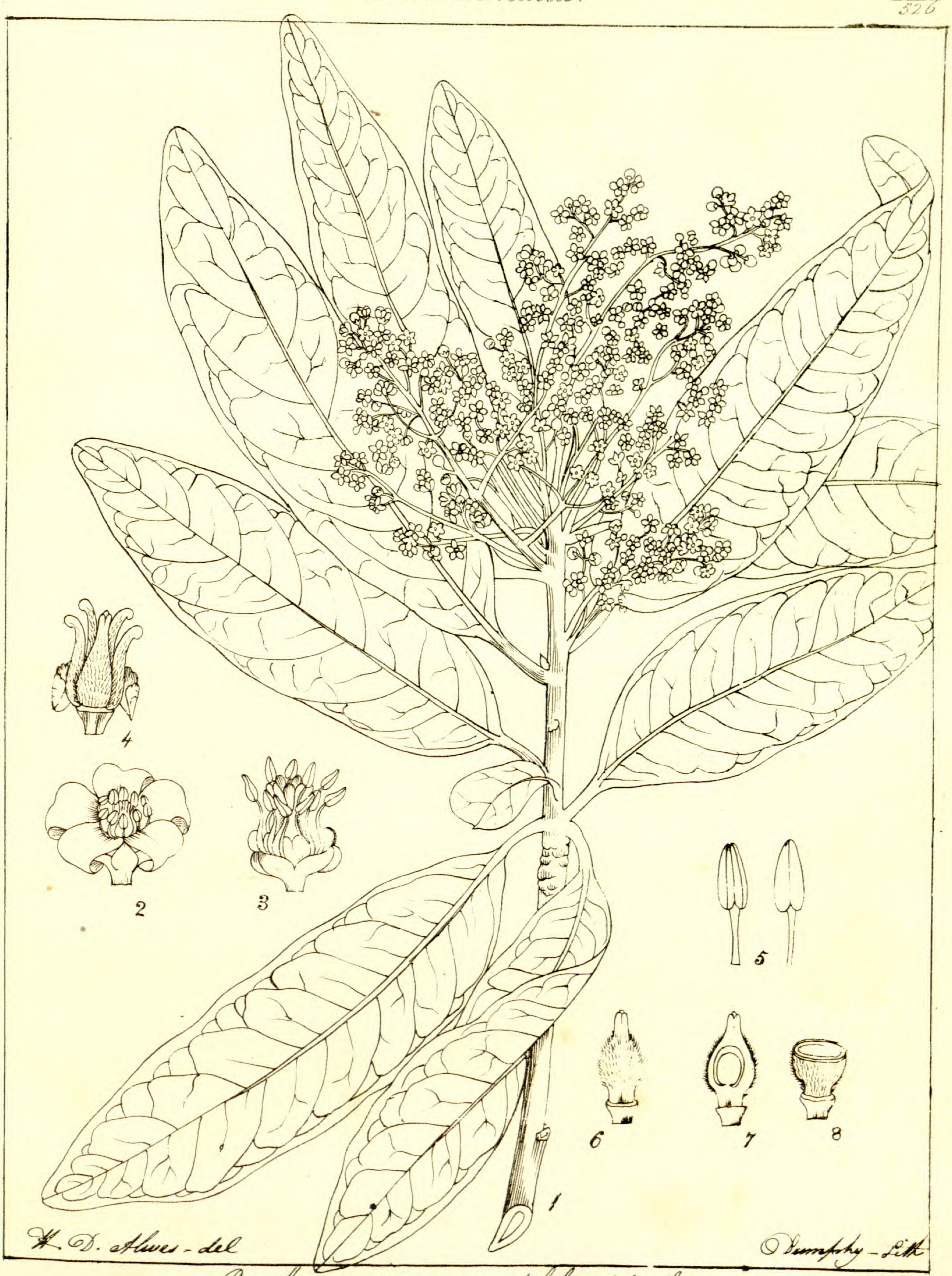
Kurkhunda; Koli; S.

Narikelee-kol. B.

Rungia del

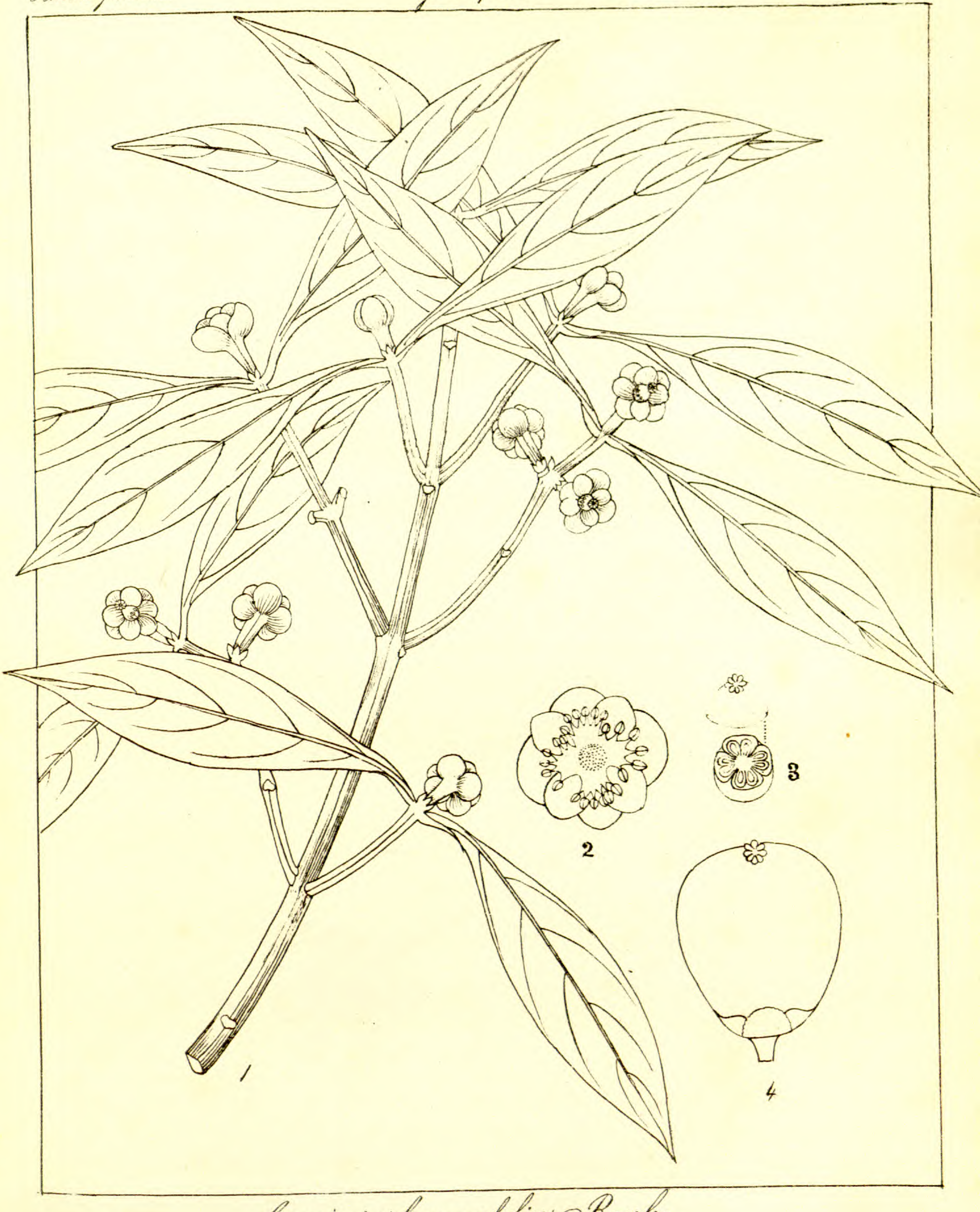
R. W. Lith

Eugenia Rottleriana (W. & A.)



Buchanania angustifolia (Roxb)

Garcinia pictoria Roxb.



Garcinia lanceæfolia Roxb.

Garcinia Roxburghii
G. Cowa Roxb. H. Ind.

Garciniæ cornea (Lin)

Calophyllum decipiens (R. W.)

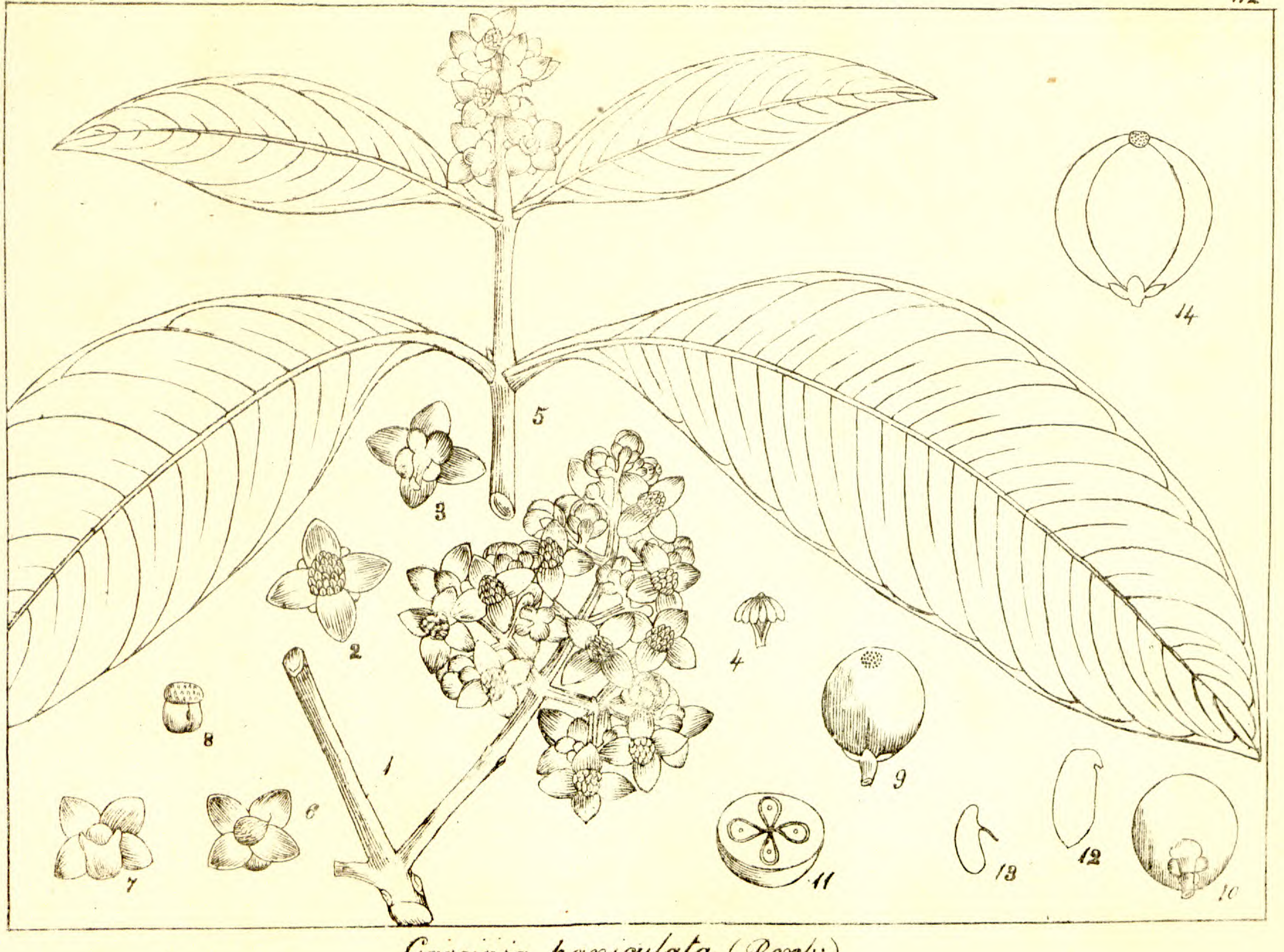
Calophyllum Burmanni. (R. W.)
β parvifolium.

Calophyllum Burmanni. a.

Lagerstræmeæ Microcarpa (R. W.)

Calophyllum tomentosum.

Calophyllum moonii. (R.W.)

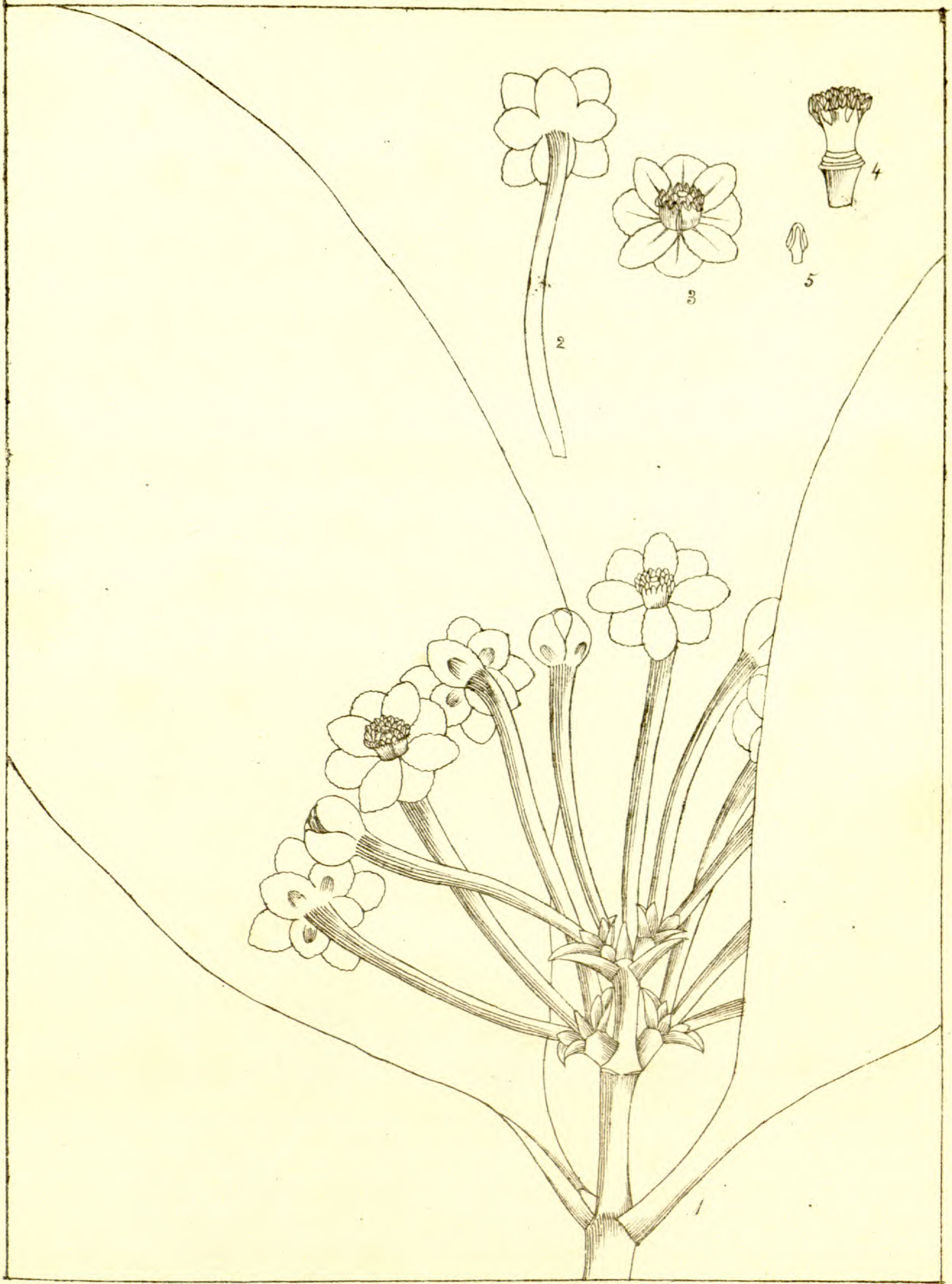


Garcinia paniculata. (Roxb:)

Garcinia Kydiana. (Roxb. Mss.)

G. Kydia. Roxb. Flora Indica.

Garcinia pedunculata. (Roxb:)



Garcinia pedunculata. (Roxb:)

Garcinia Merguensis (R.W.)

Mesua coromandelina. (R. W.)

Mesua ferrea. (Lin:)

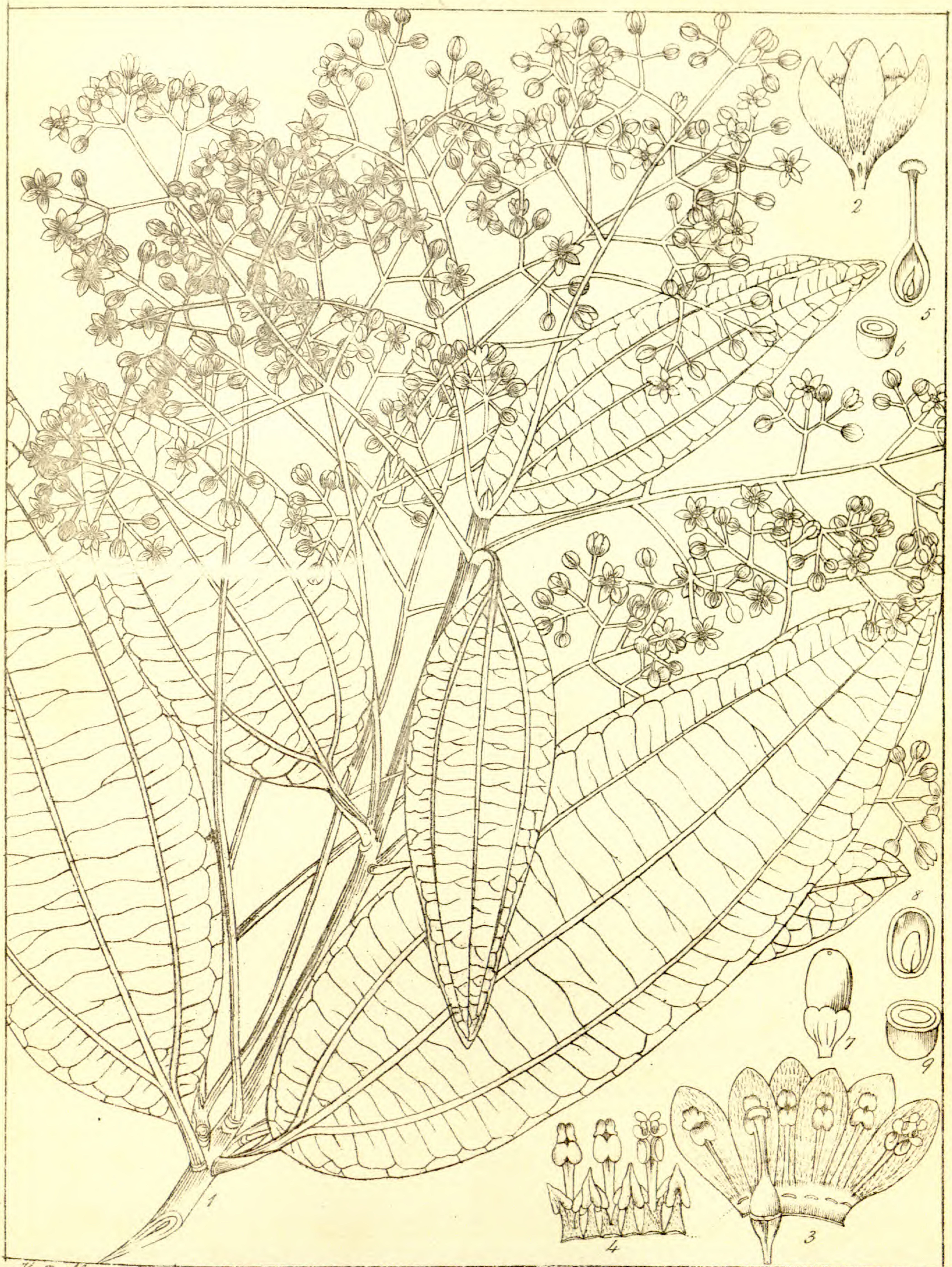
Mesua pedunculata. (R. W.)

Garcinia ellipica? (Wall:)

H. D. Alwis. del

R. W. lith

Garcinia conicarp. (R. W.:)



H. D. Alvis del.

Cinnamomum iners (Nees)

Cinnamomum iners! (Nees)

Cinnamomum zeylanicum.

Cinnamomum Nitidum (Nees)
Laurus Nitida (Roxb)

Cinnamomam ovalifolium (R.W.)

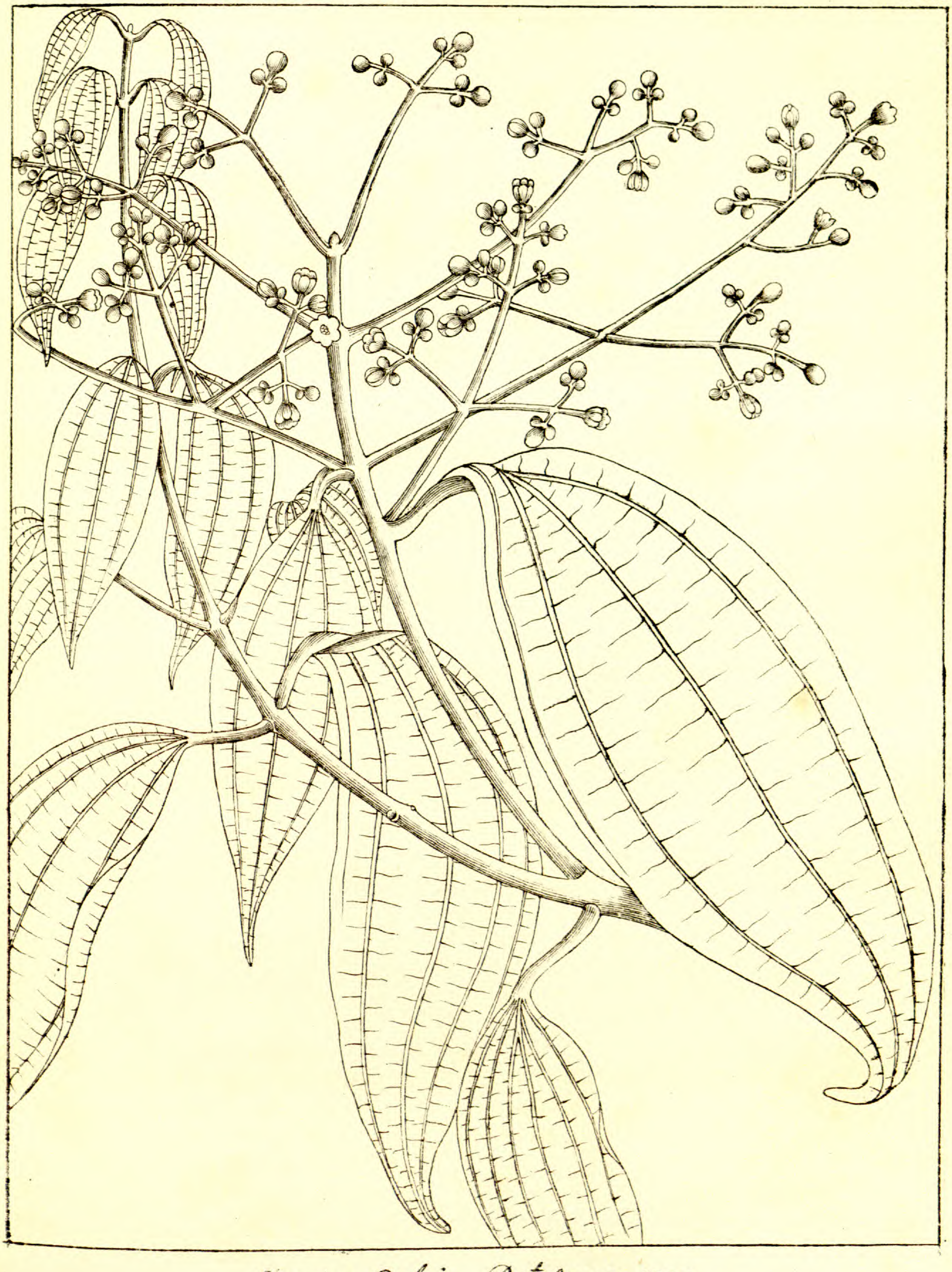
H. D. Alwis del

R. W. lith

Cinnamomum multiflorum. B. R. W.

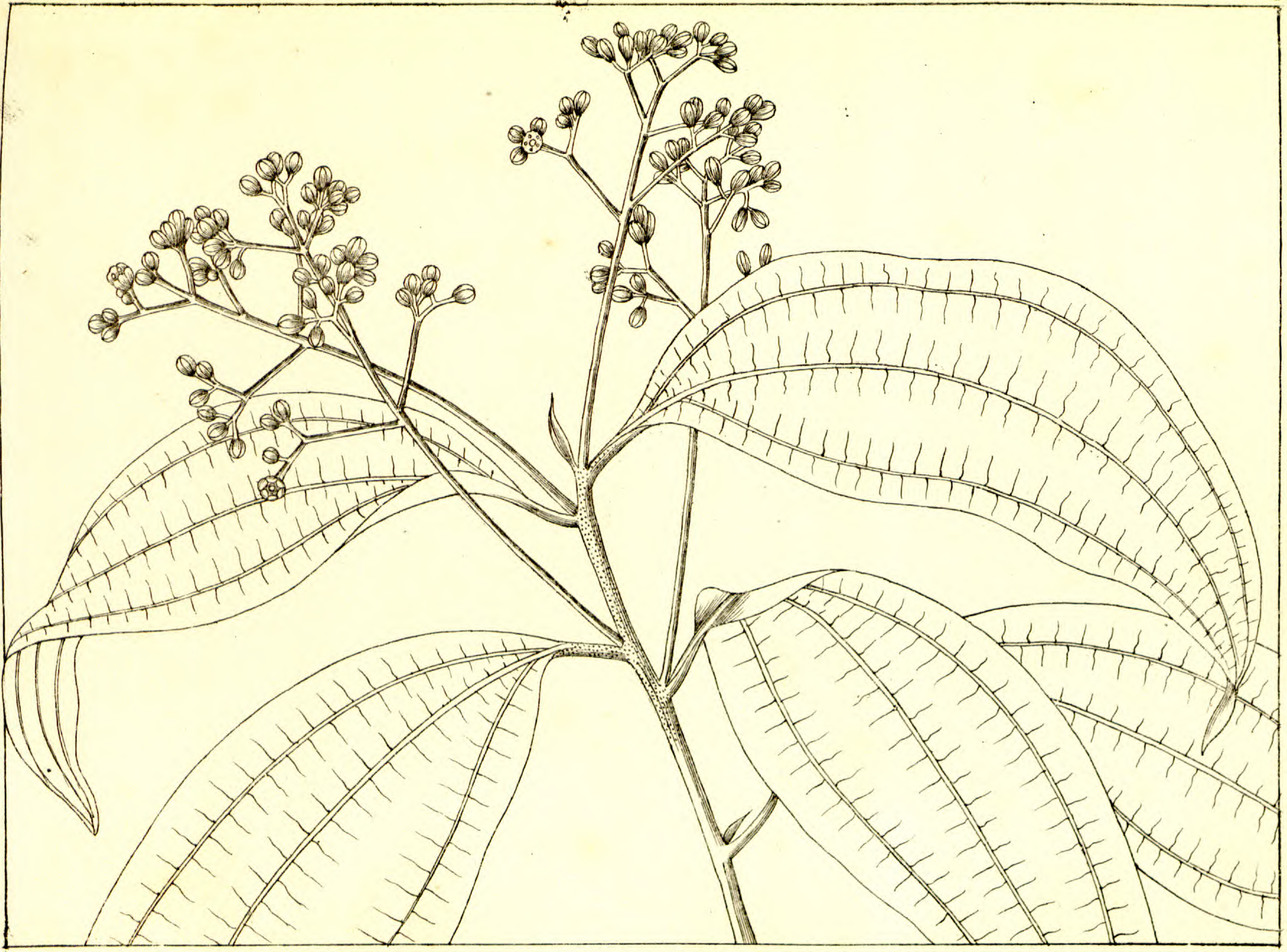
Cinnamomum villosum. (R. H.)

Cinnamomum perpetuo florens? Burm.



Laurus Cassia. Bot. mag. 1636.

Cinnamomum Zeylanicum. ♄ (Nees)



Laurus Cinnamomum. Bot. mag. 2028.
? Cinnamomum Zeylanicum. γ (Nees.)

Cinnamomum iners

Carua, Hort: mal: 1 tab 51

Laurus multiflora Roxb
Cinnamomum multiflorum

Litsæa zeylanica Nees
Laurus Cassia Linn.

Laurus recurvata. (Roxb.:)

Cinnamomum ? Recurvatum.

Cinnamomum zeylanicum. Nees
Cinnamomum perpetuo florens? Burm

Cinnamomum dubium Nees

Cinnamomum aromaticum. Nees.

Laurus Cinnamomum. Bot. Rep. N. 596

Cinnamomum Culitlawan.

Laurus culitlaban (Roxb.)

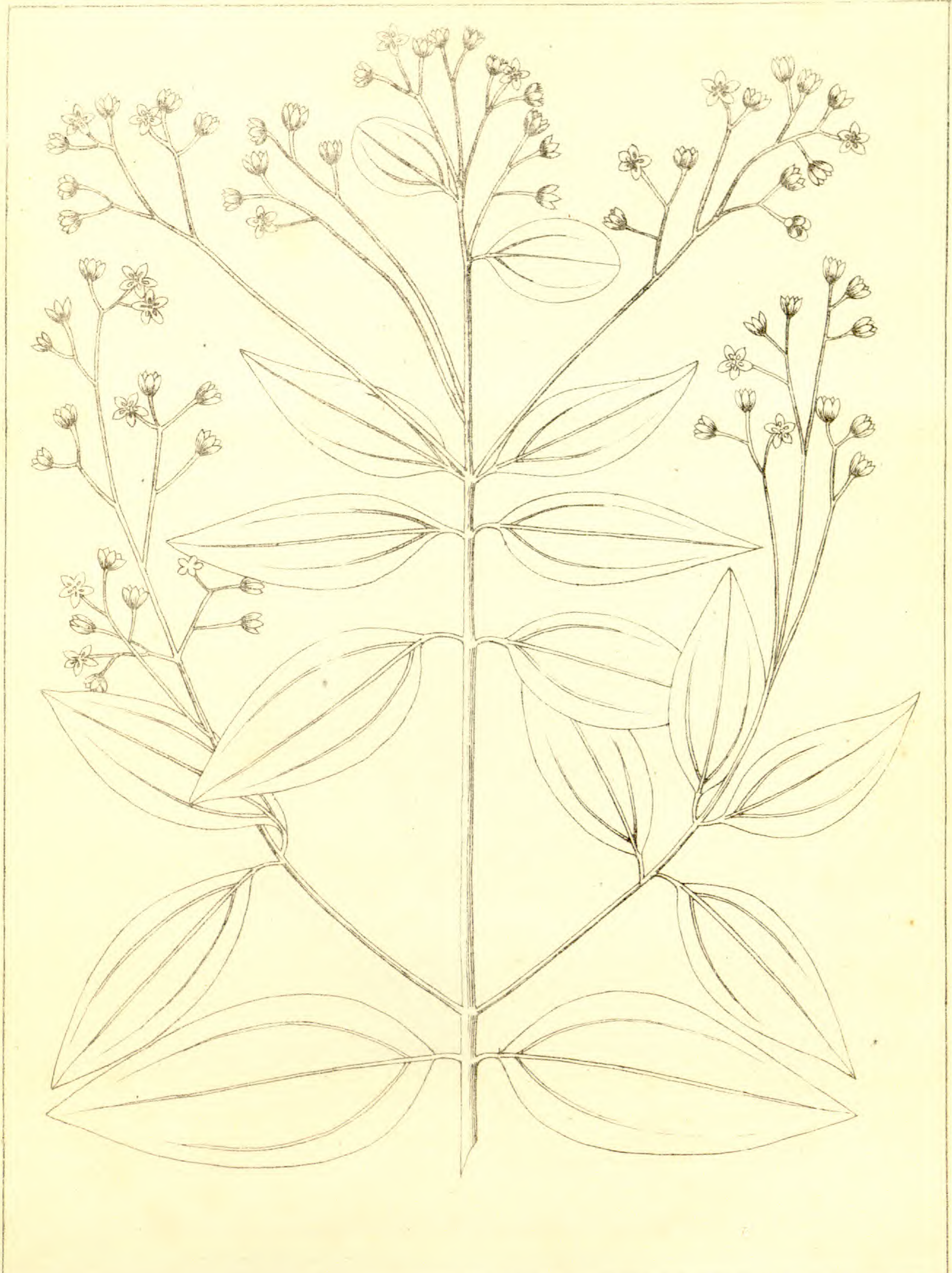
Cinnamomum dulce

Laurus dulcis. (Roxb)

Cinnamomum obtusifolium (Nees)

Laurus obtusifolia (Rox)

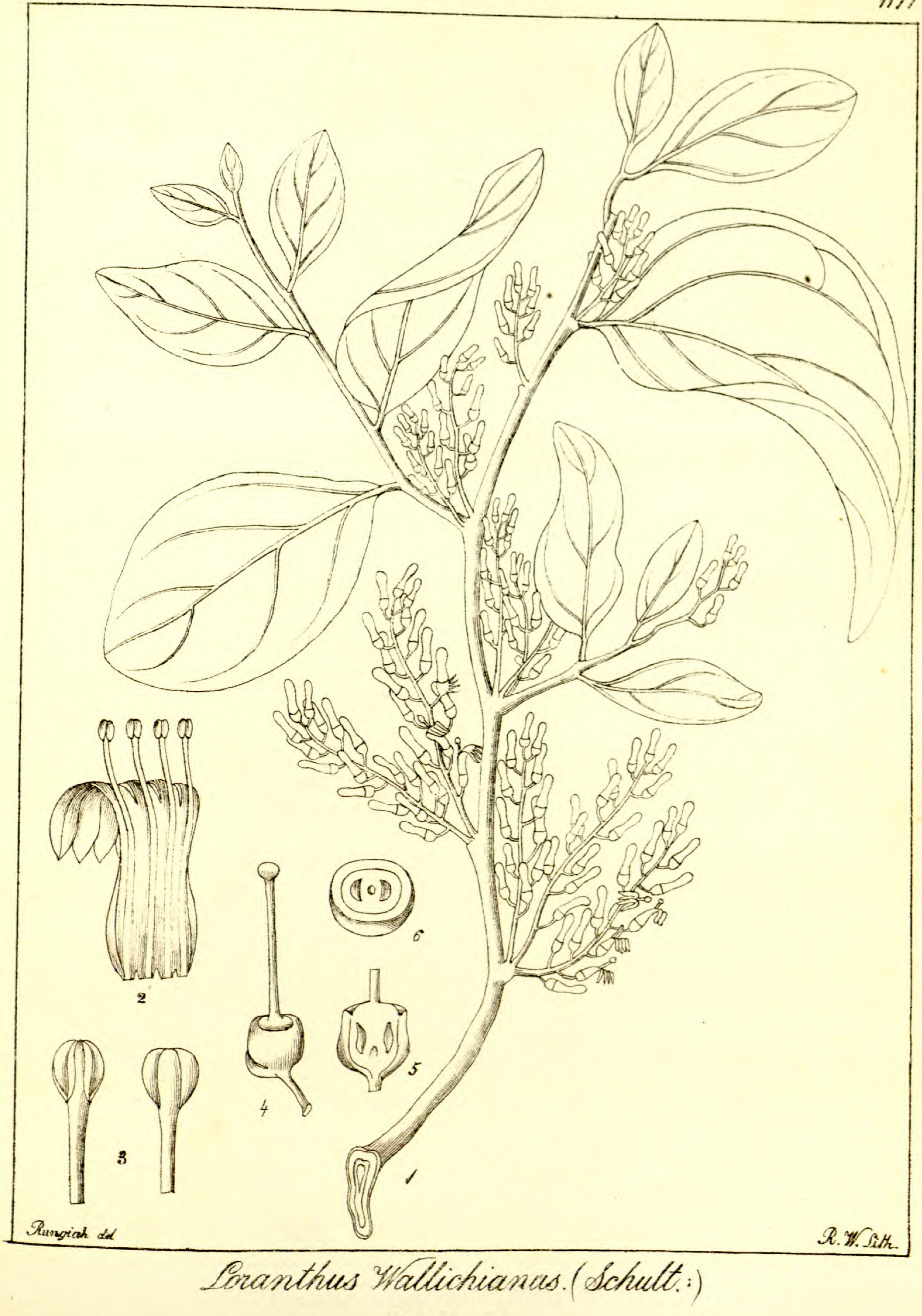
Cinnamomum albiflorum (Nees)
Laurus Cassia (Roxb.)



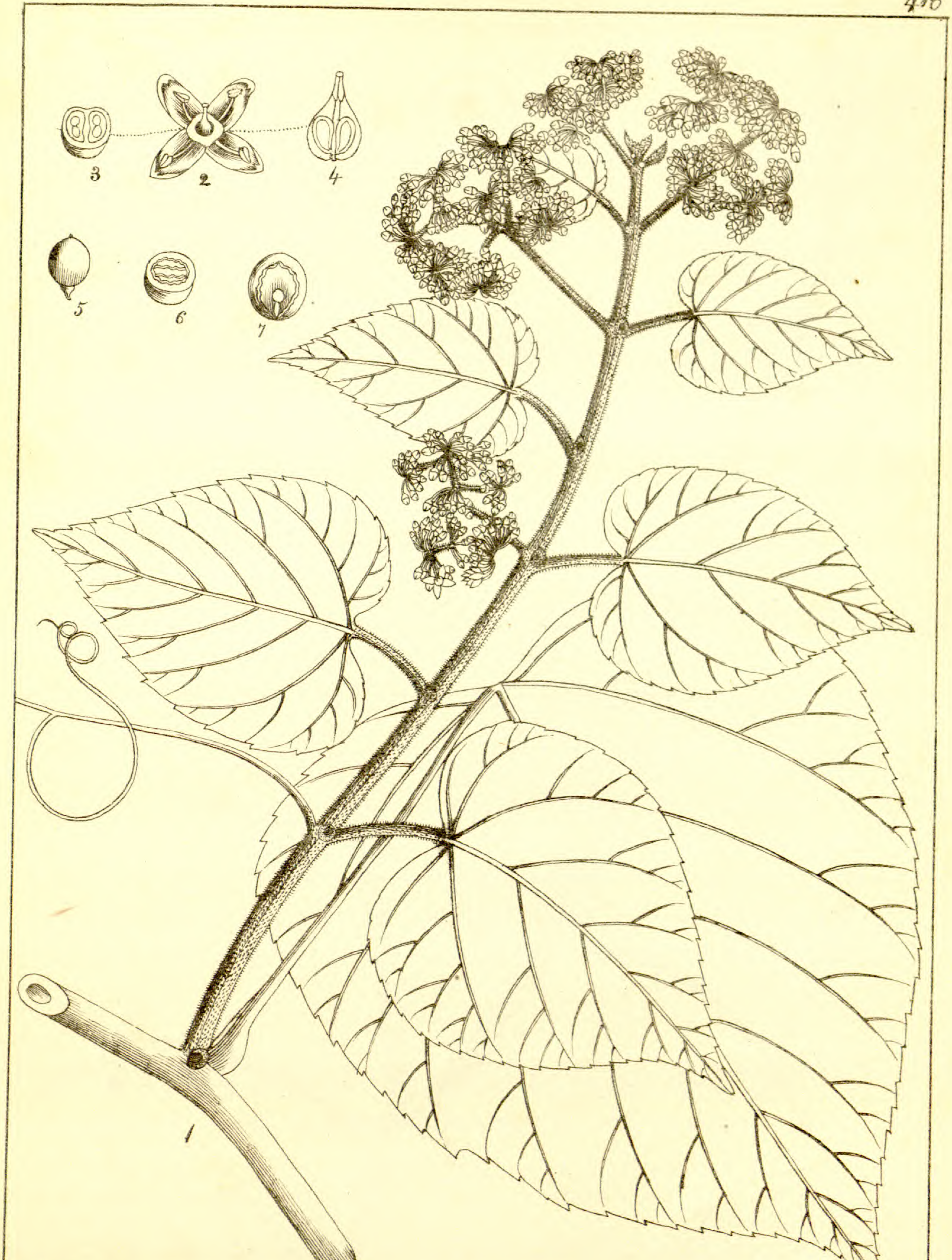
Cinnamomum perpetuo florens (Burm)

Rungiah. del. R. W. Lith.

Loranthus memecylifolius. (W. & A.:)



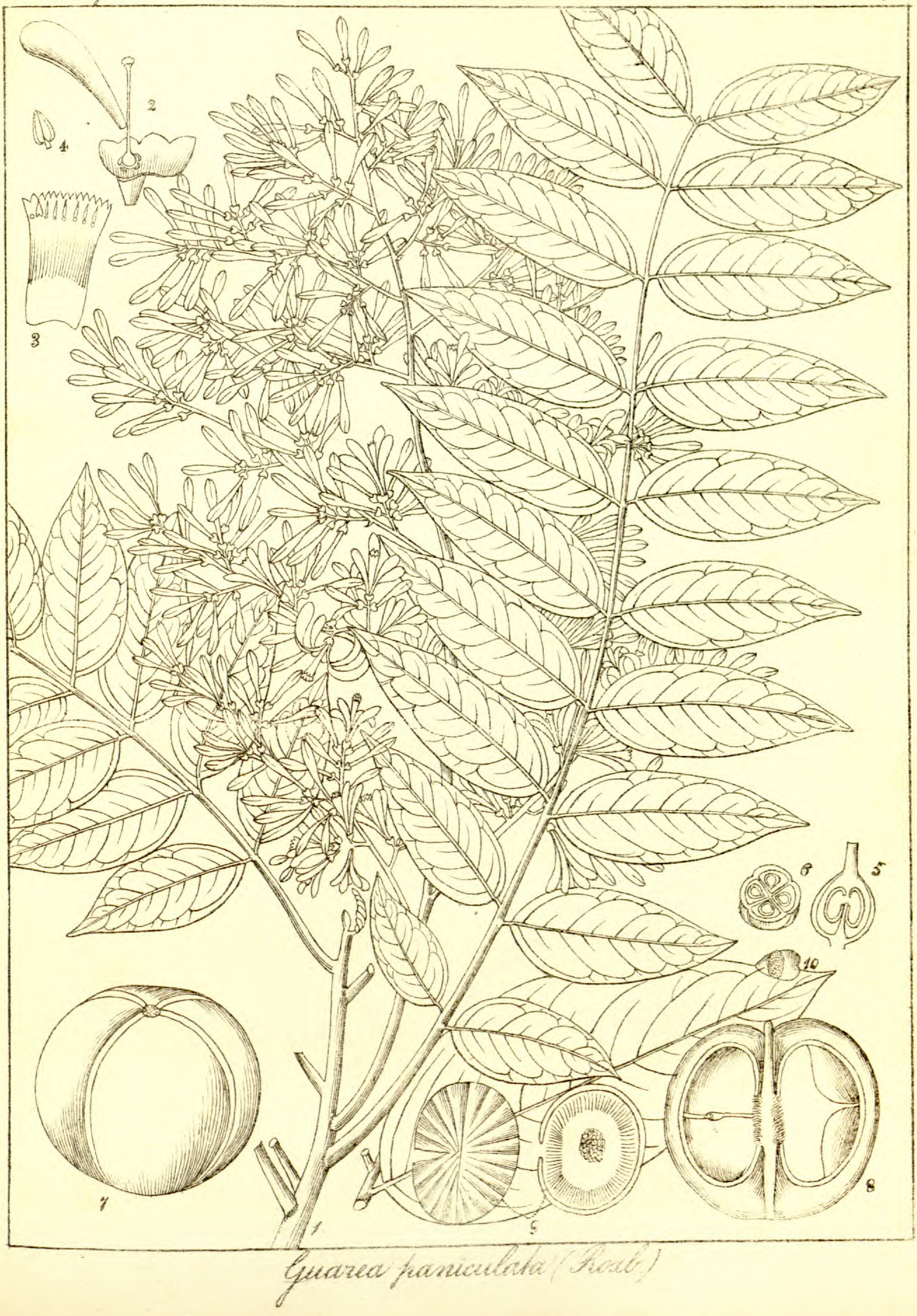
Loranthus Wallichianus. (Schult.:)



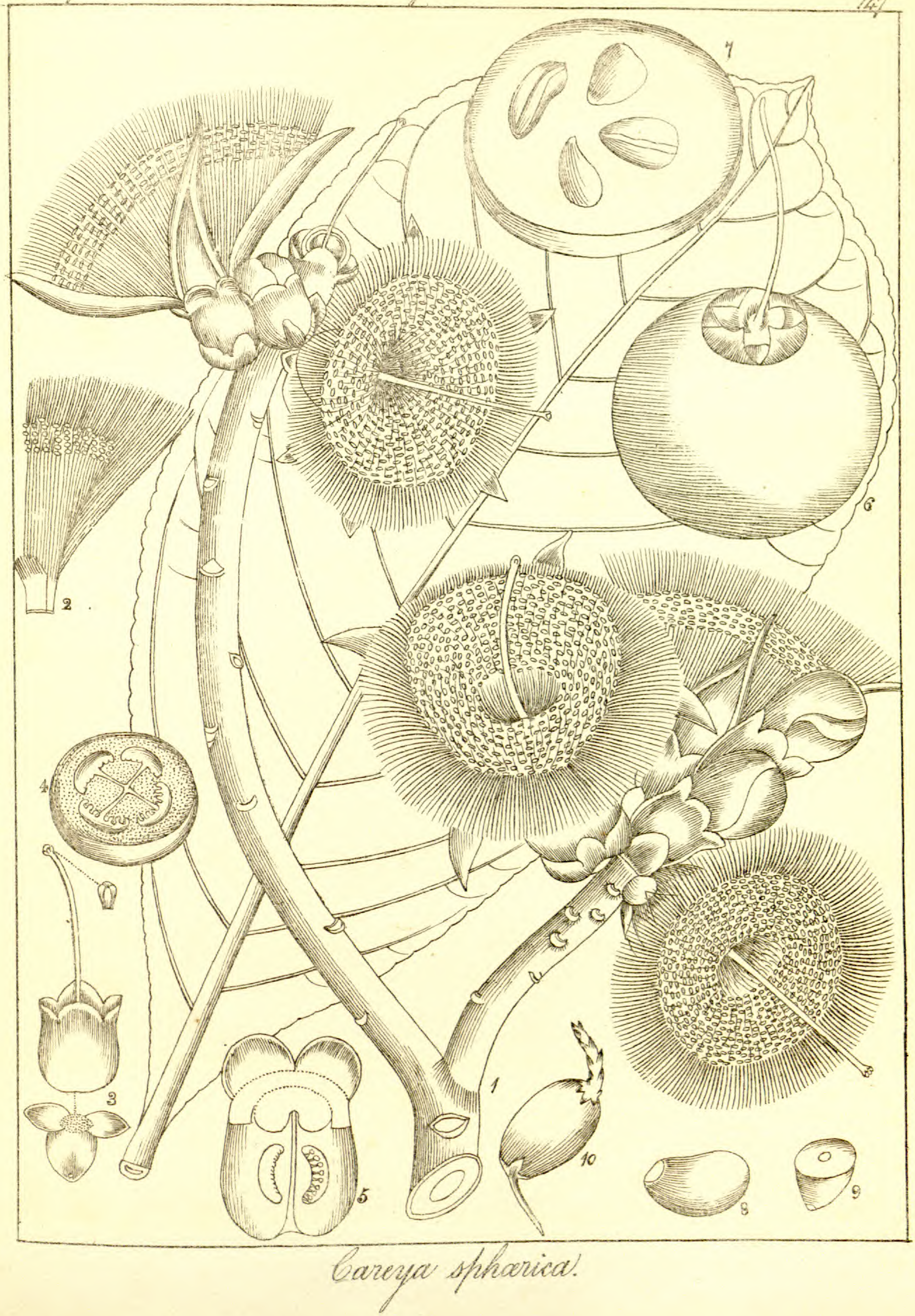
Cissus adnata. (Roxb.:)
Vitis adnata (Wall.:)

R. W. Lith

Cissus auriculata. (Roxb.:)
Vitis auriculata (Wall.:)

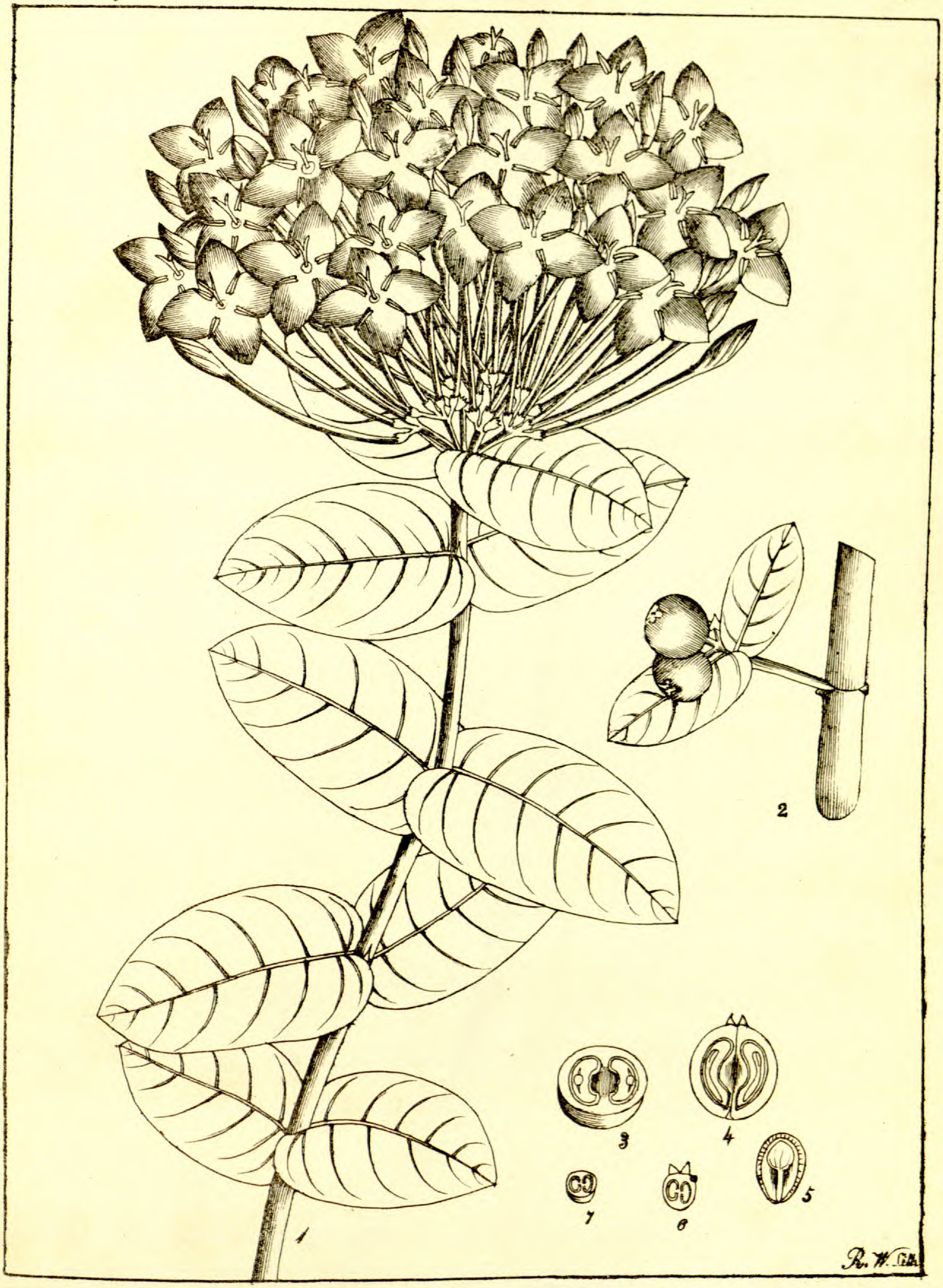


Guarea paniculata (Roxb.)



Careya sphærica.

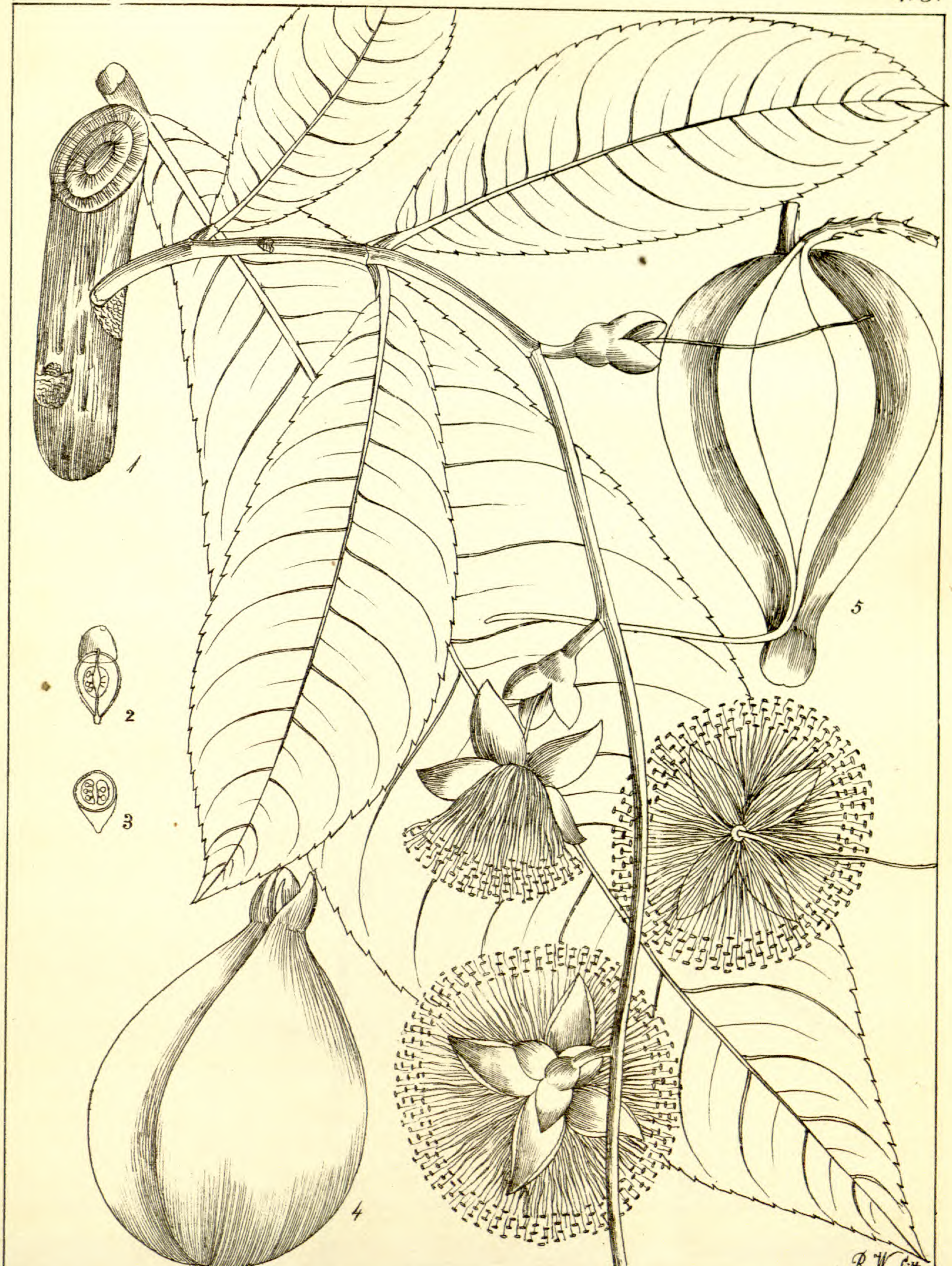
Pavetta indica (Linn.)
Ixora pavetta (Roxb.:)



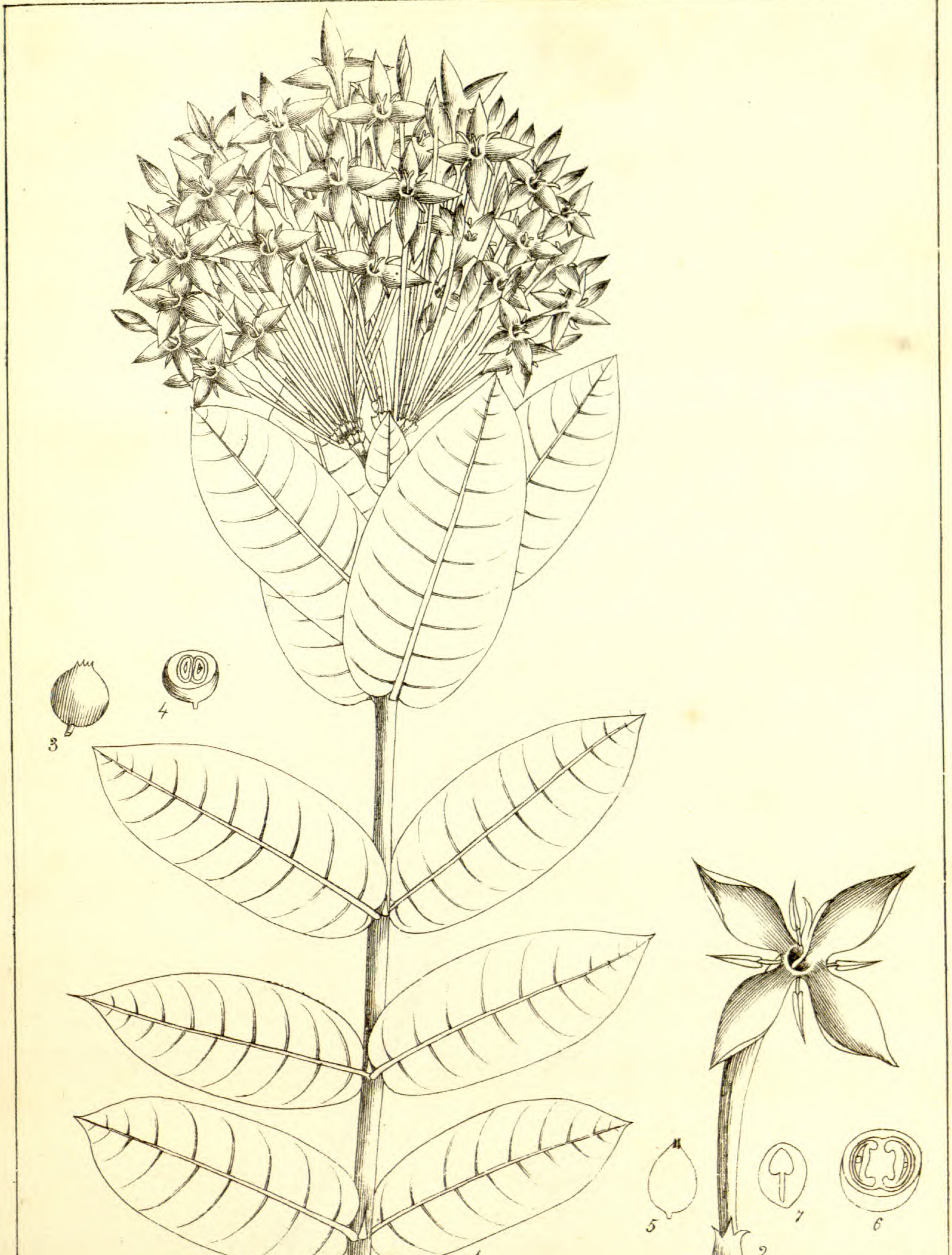
Ixora Bandhuca (Roxb:)

Ixora villosa (Roxb)

Ixora fulgens (Roxb)



Barringtonia racemosa. (Roxb.:)



Ixora coccinea (Linn:)

Rungia del.

Dunphy Lith.

Abelmoschus ficulneus (W. & A.)

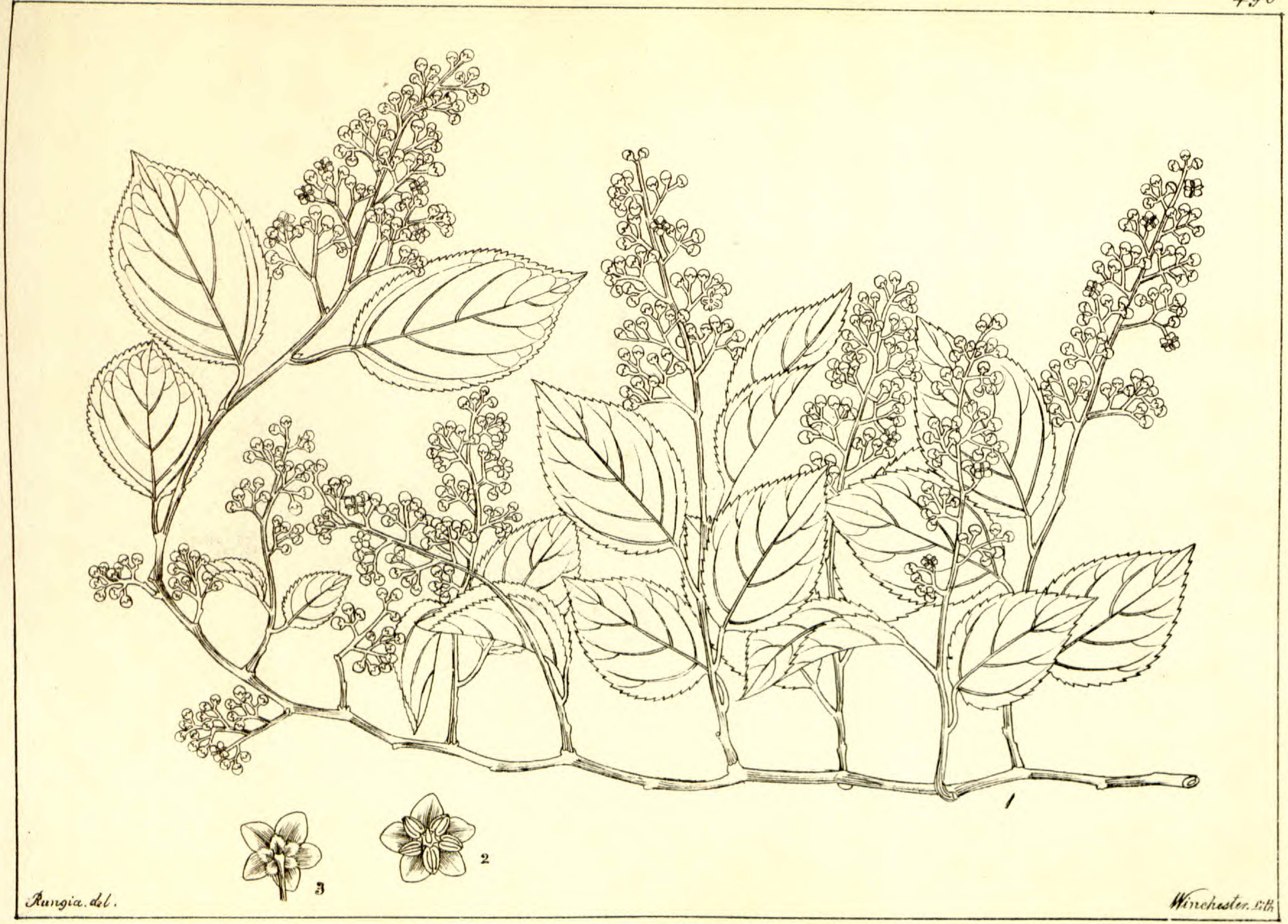
Rungiah, del.

Dunphy, Lith.

Pleurostylia Wightii (W. & A.)

Ipomæa pulchella.

Ipomæa chrysoides.



Rungia. del.

Winchester. Lith.

Celastrus paniculata. (Willd :)

பேபுலா }
Papoola }

Rhamnus Wightii. (*W. & A.*:)

Rungiah del.
மலைவேப்பமரம்
Malie Vapamarum

Melia Azedarah (Linn)

Dumphy Lith
తురకవేపమాను
Thoraka Vaypaymanoo

Rungiah, del.

Cedrela Toona (Roxb)

Dumphy, Lith.

Thoonoomarum

Rungiha del.

Winchester lith.

Lophopetalum Wightianum. (Arn.:)

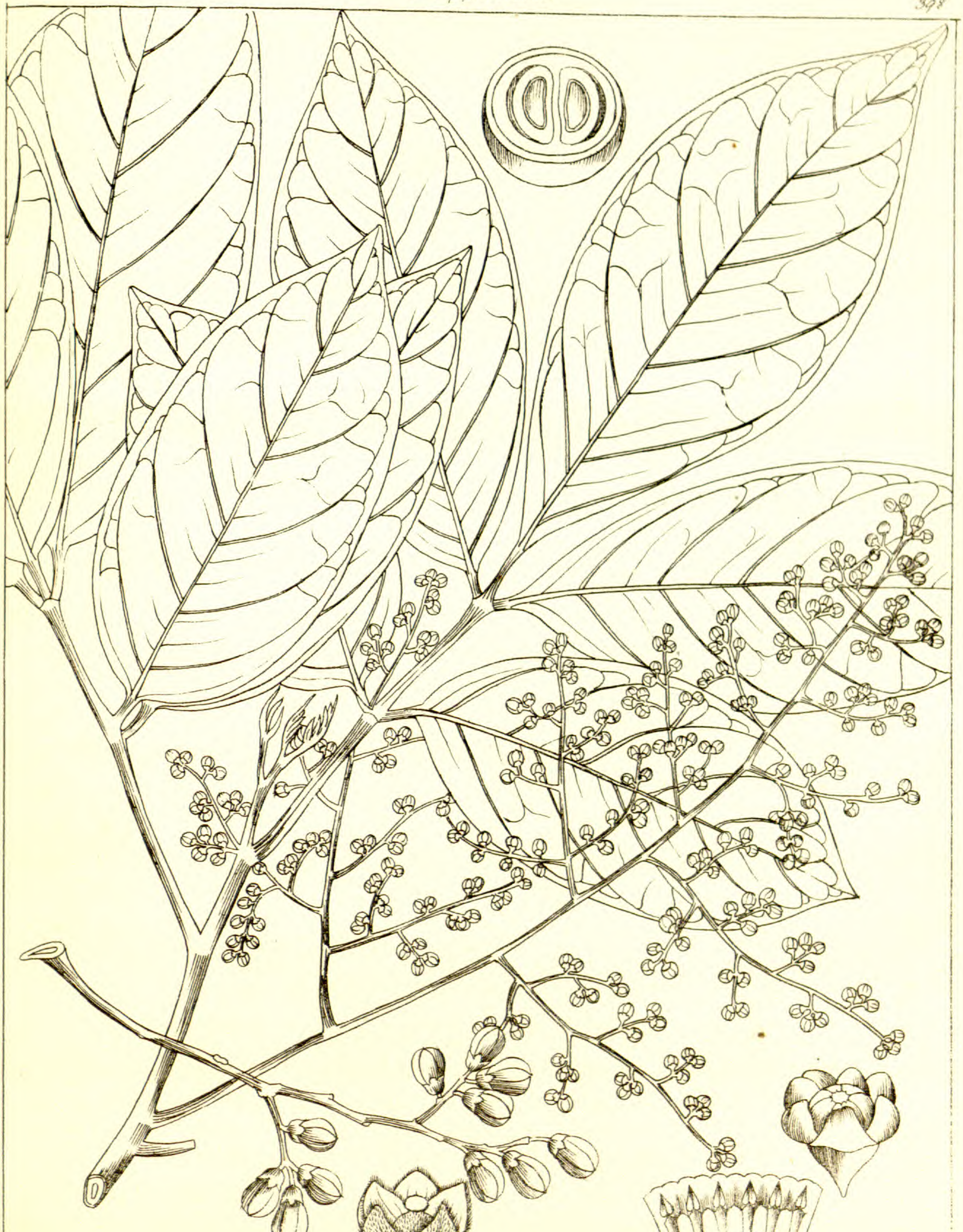
Ventilago maderaspatana. (Gærtn.:)

Vatica laccifera (W & A.)

Dumphy, Lith.

Rangiah, del. Dumphy, Lith.

Shuteria vestita (W. & A.)



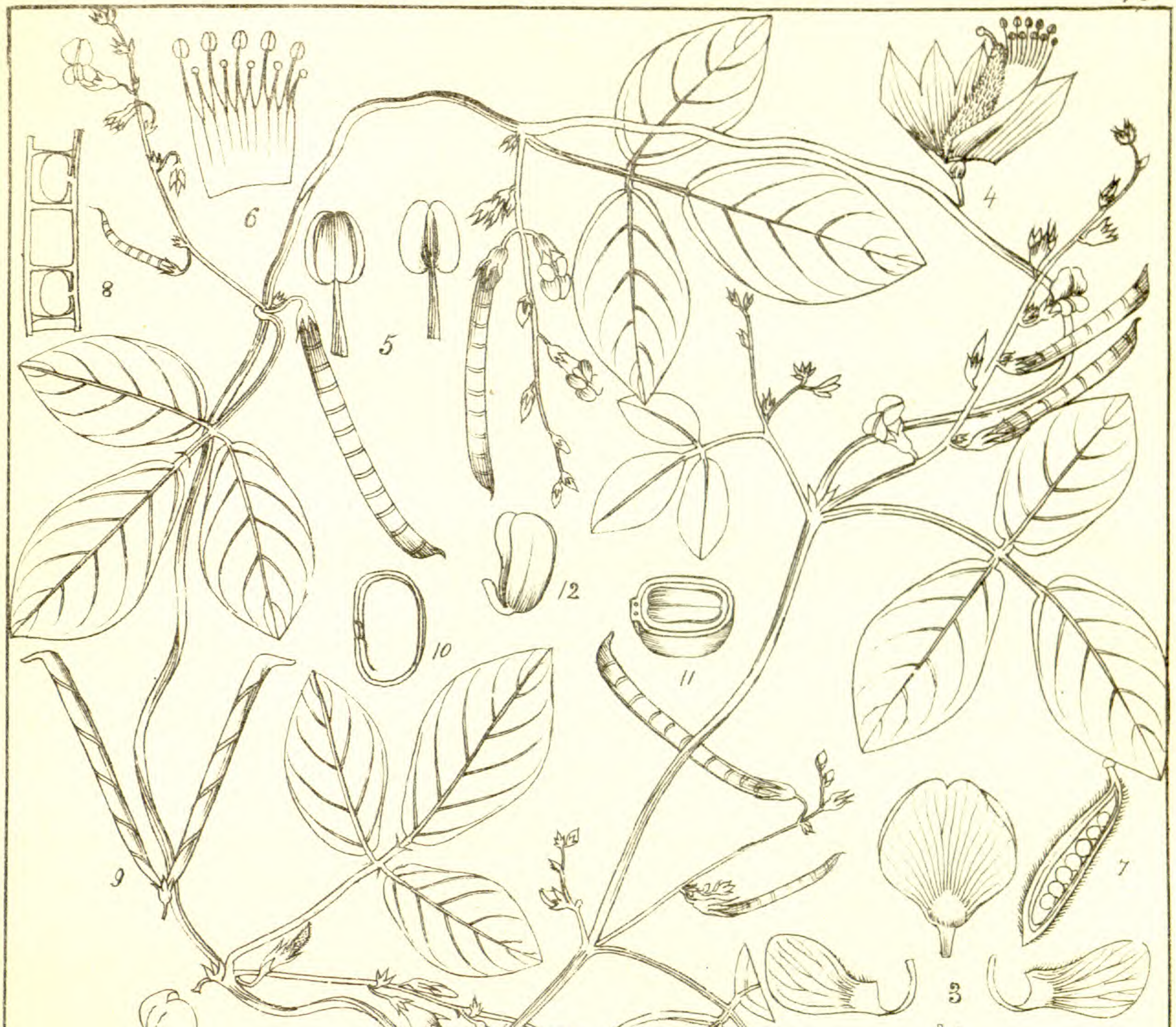
Rungiah, del. Dumphy, Lith.

Milnea Roxburghiana.

Rungiah, del.

Dunphy, Lith

Glycosmis triphylla (Wight)



கொள்ளுப்பூண்டு
Colloopoondoo. T.

Glycine labialis (Linn:)

Ipomœa sessiliflora (Chois.)

புளிநாரணை
Poolie naranie. } Tam

Vitis setosa. (Wall.:)

Burray butchellie } Gent.

Rungiah. del.

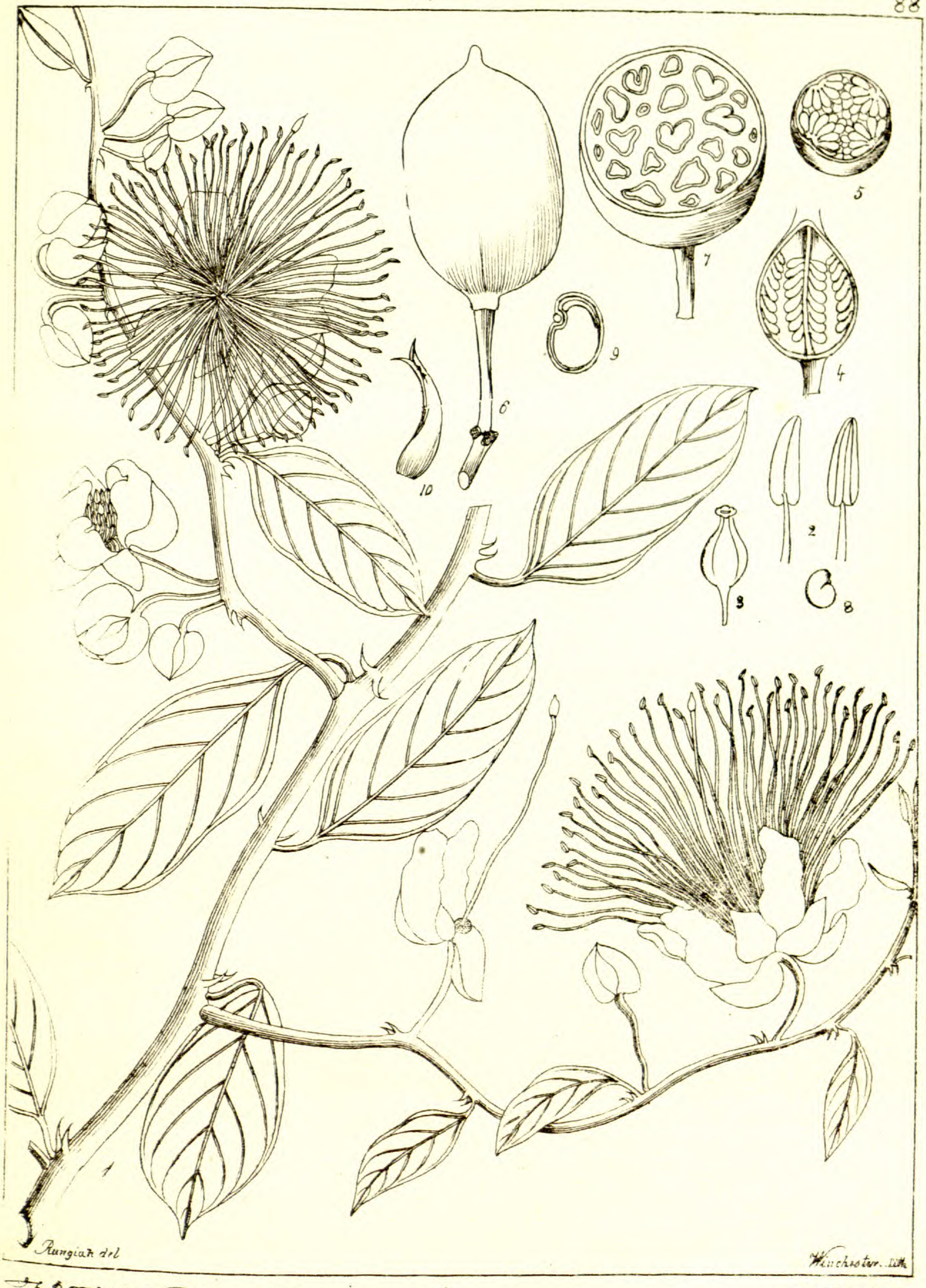
Winchester Lith.

Vitis carnosa. (Wall.:)

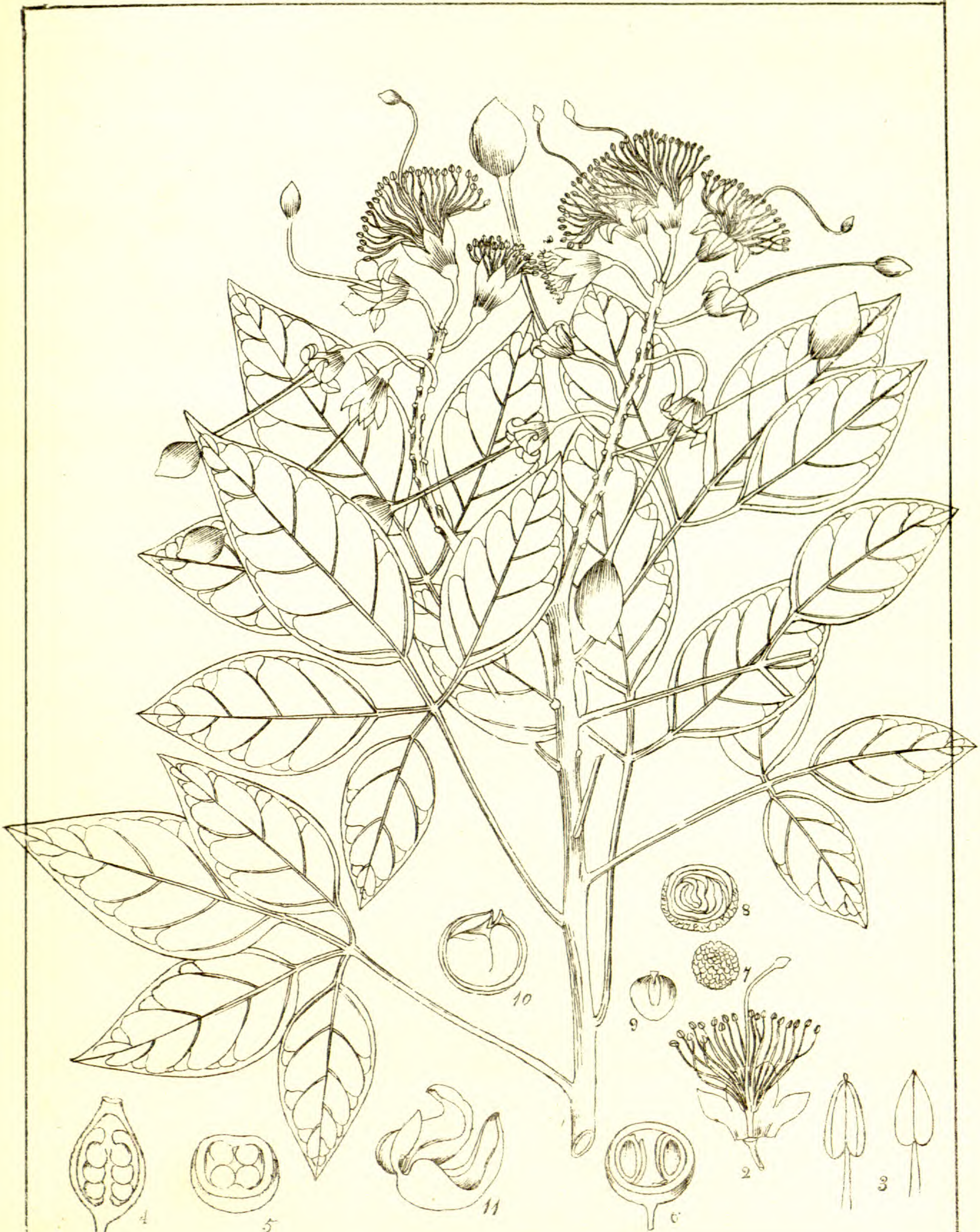
பாதமரம } Tam
Bathamarum

Terminalia Catappa. (Linn:)

బాదాంమాను } Tel.
Bathammannoo



Athandie } Tam — *Capparis horrida.* (Linn:) — Arthondah } Gen



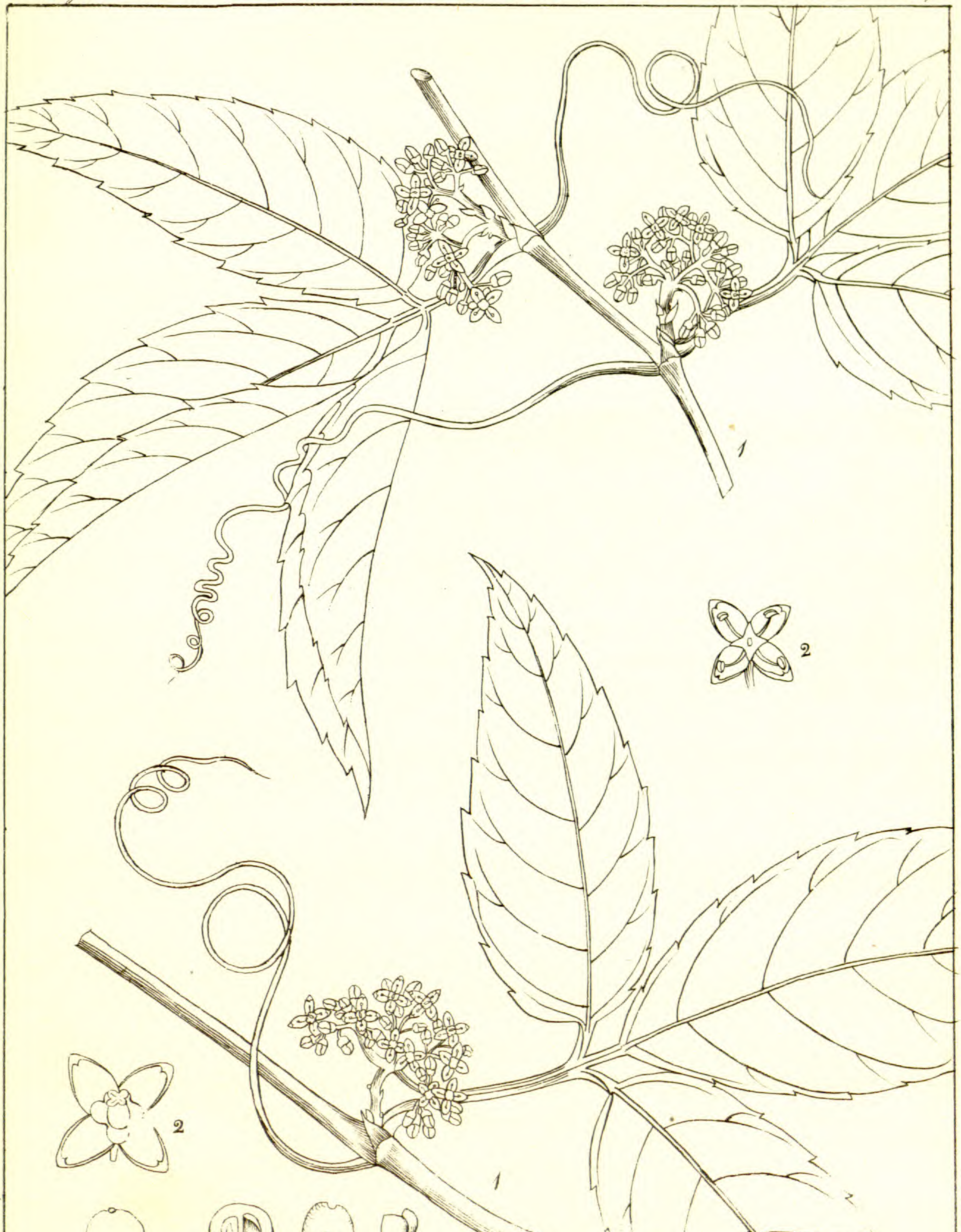
Rungiah, del. Dumphy, Lith.

Niebuhria linearis (D.C.)

Rungiah, del.

Dumphy, Lith.

Limonia missionis.

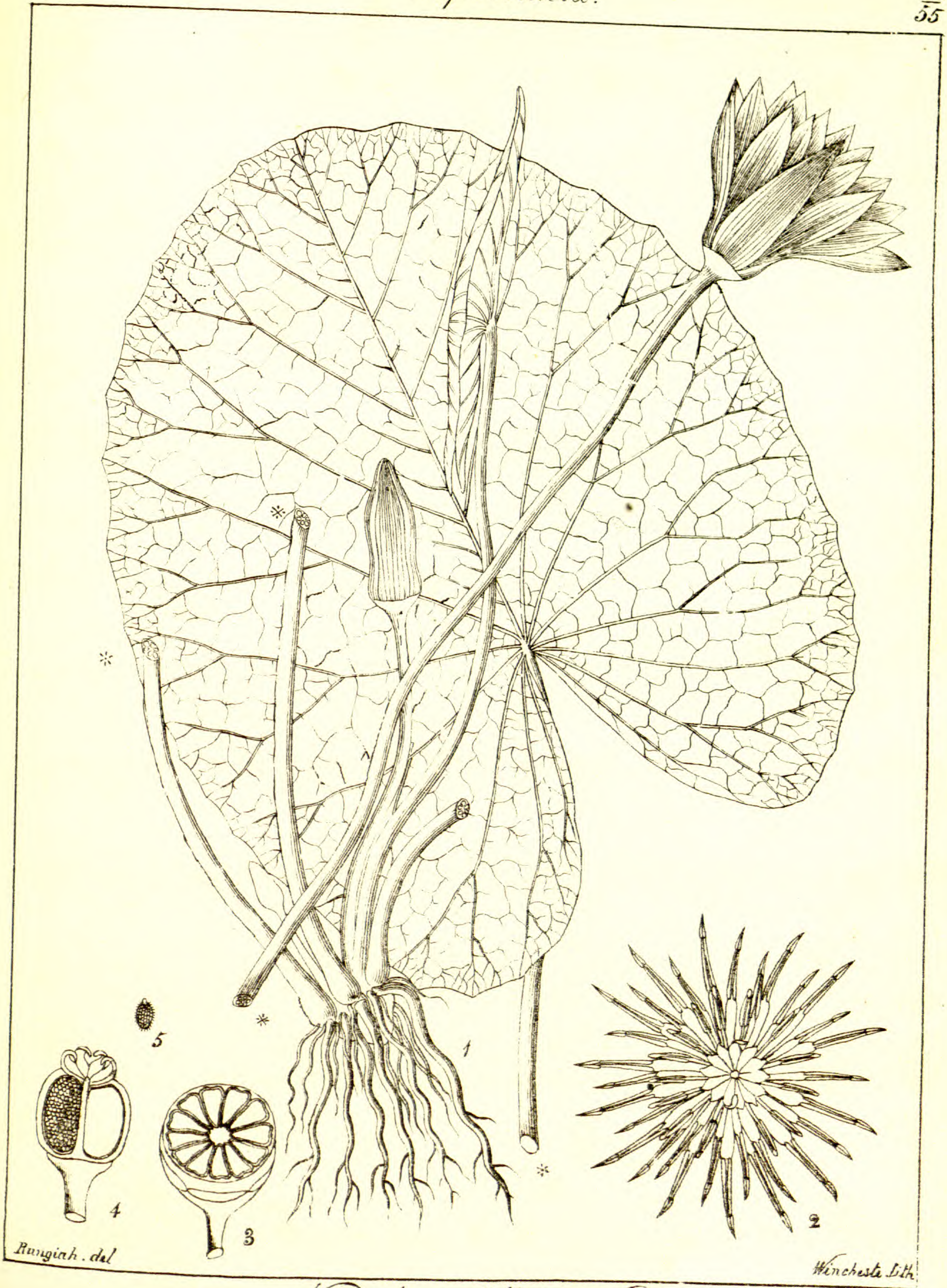


Dunphy, Lith.

Vitis angustifolia (Wall.)
Cissus angustifolia (Roxb.)

Rungiah del. Dumphy lith.

Vitis lanceolaria (Wall.)
Cissus lanceolaria (Roxb.)



Nymphæa stellata (Willd.:)

Rungiah. del

Winchester. lith

Modecca Wightiana (Wall.)

Rungiah, del. Dumphy, Lith

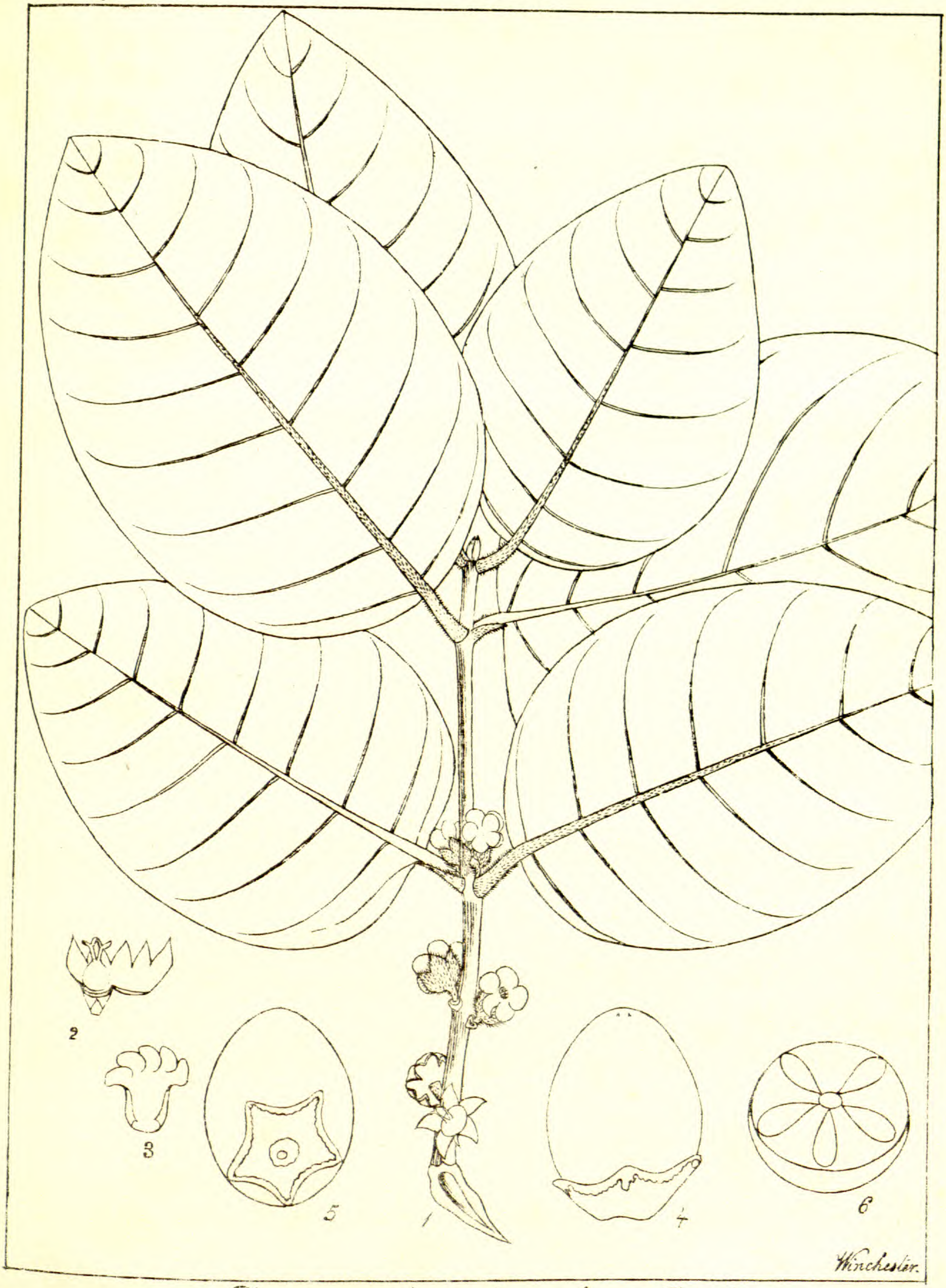
Helicteres Isora (Linn)
Isora corylifolia (Endlicher)

Rungiah, del.

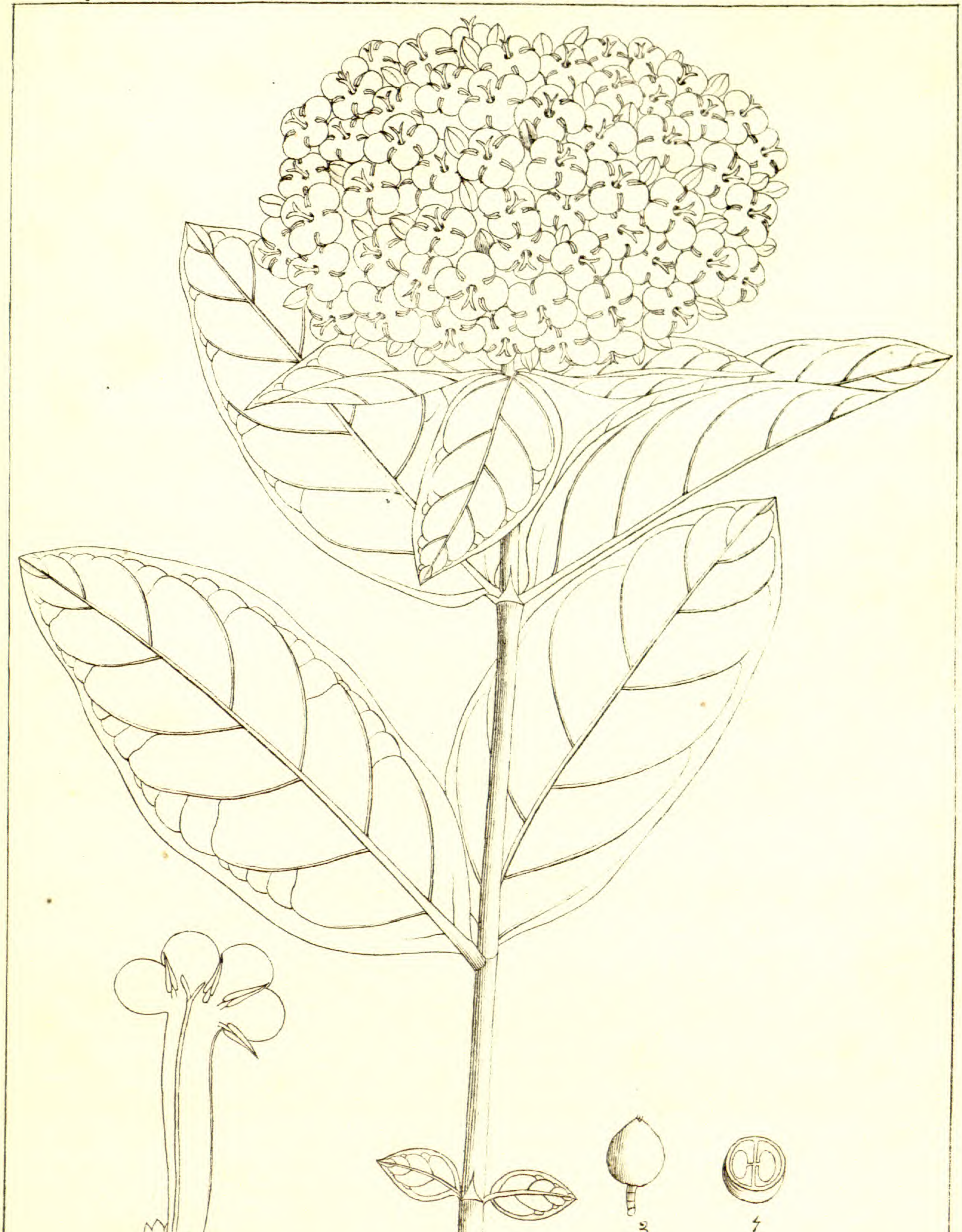
Sterculia fœtida (Linn)

Dunphy, Lith.

Diospyros tomentosa - mas - (Roxb.:)



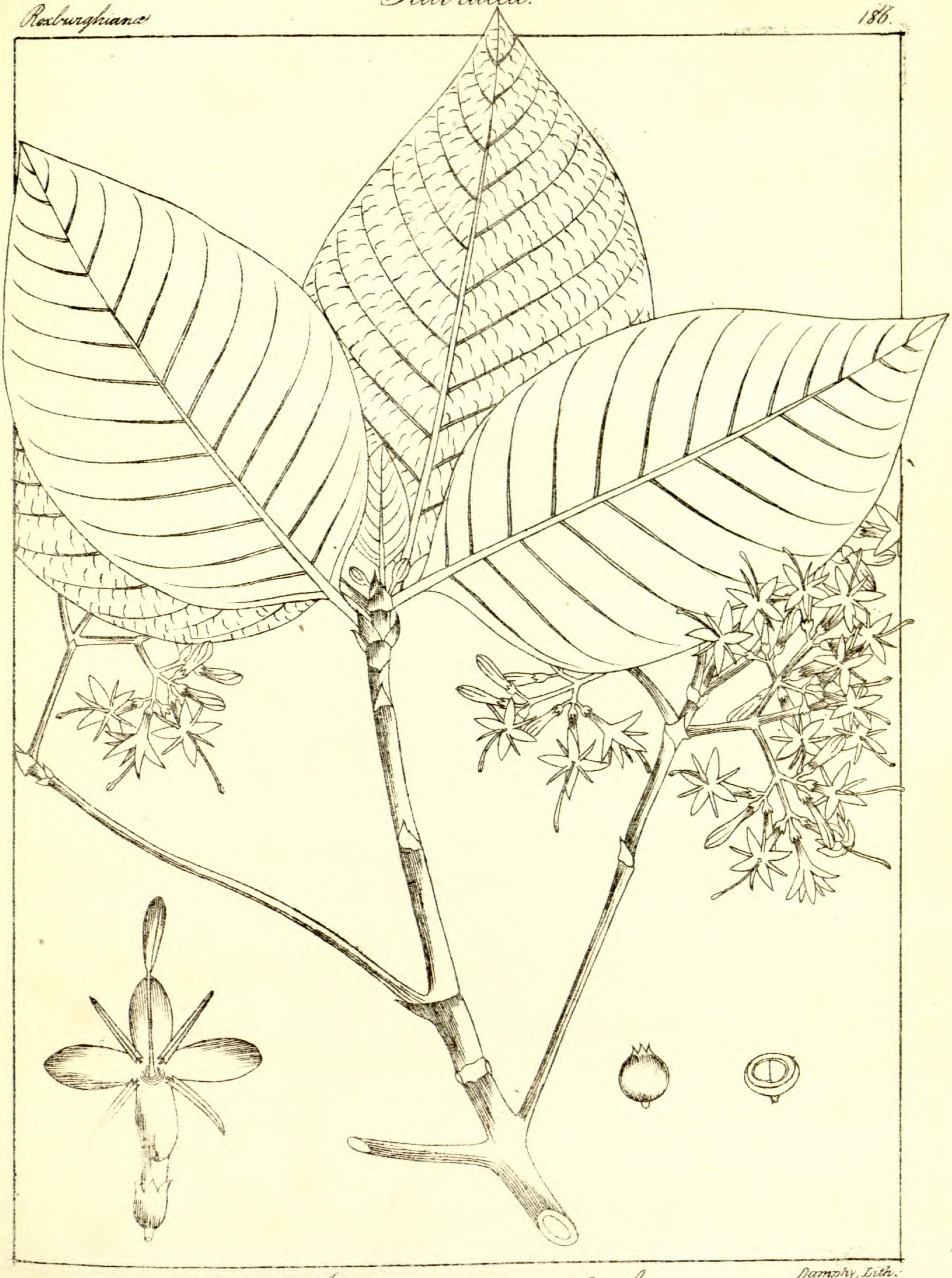
Diospyros tomentosa _ fem _ (Roxb.:)



Ixora stricta (Roxb:)

Ixora barbata. (R.)

Winchester Lith

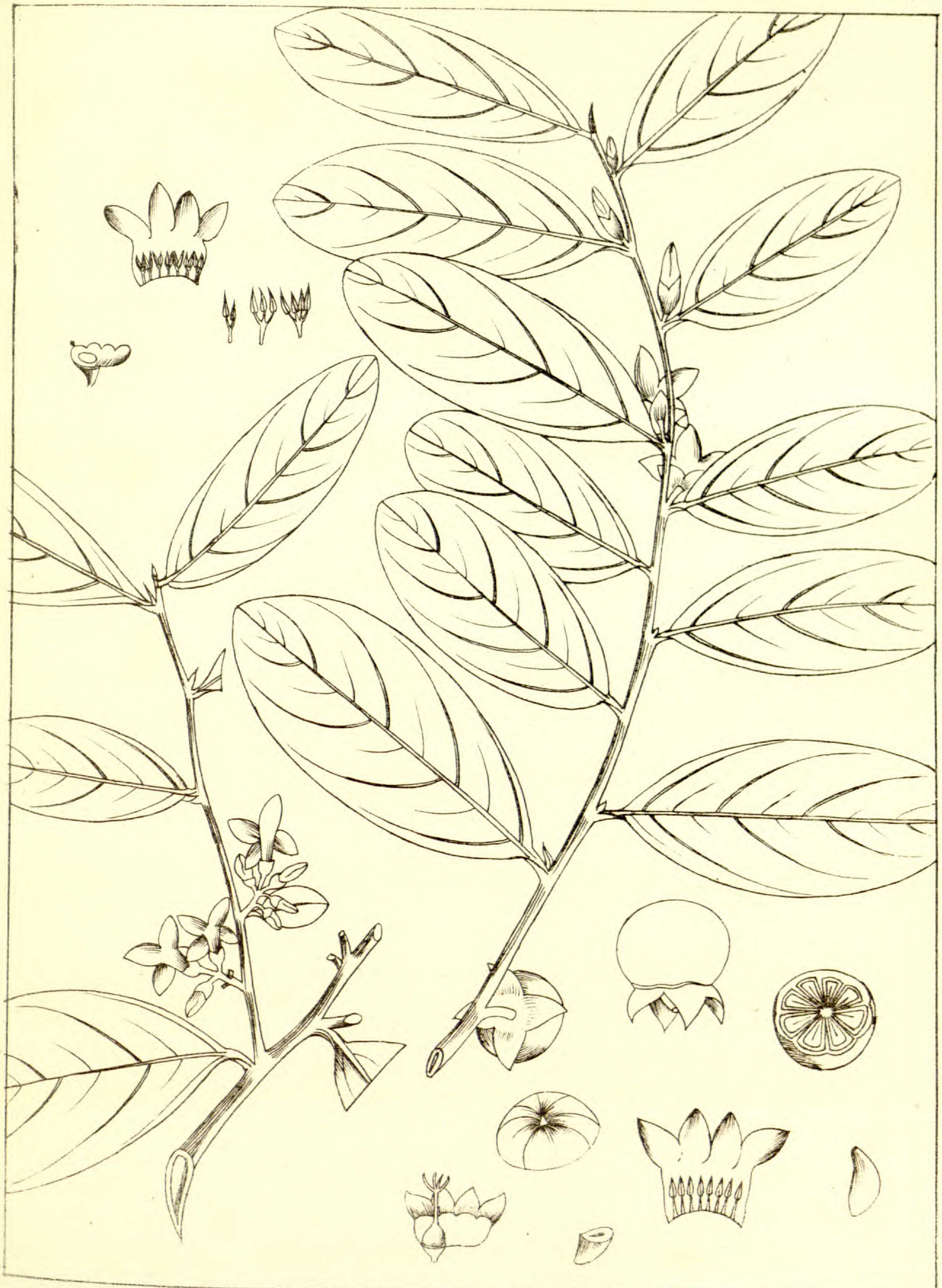


Damphy, Lith.

Ixora tomentosa (Roxb.)

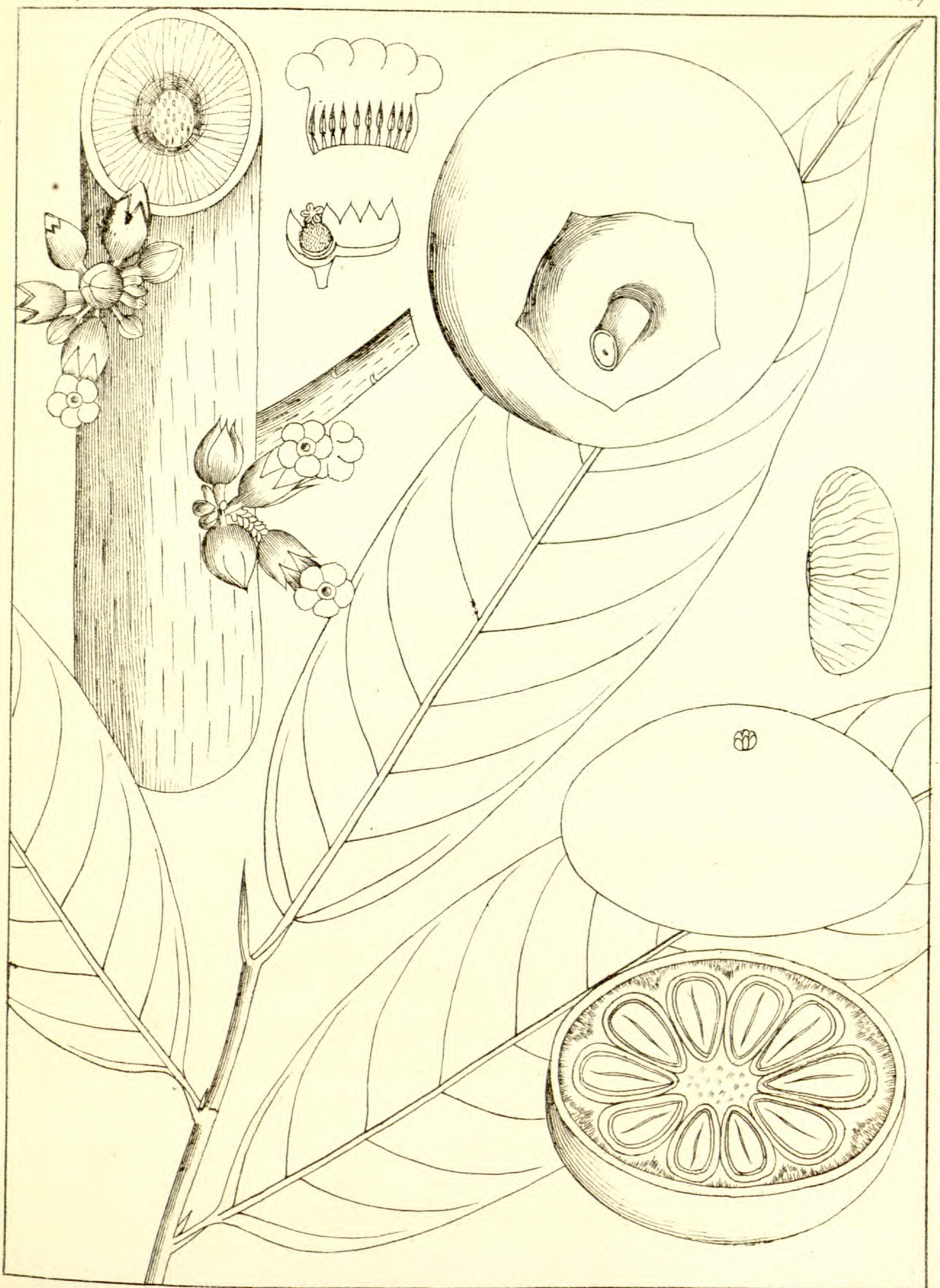
Rubia munjista (Roxb.)

Dumphy, Lith.



Diospyros Ebenum.

Dumphy, Lith.



Diospyros ramiflora (Roxb.)

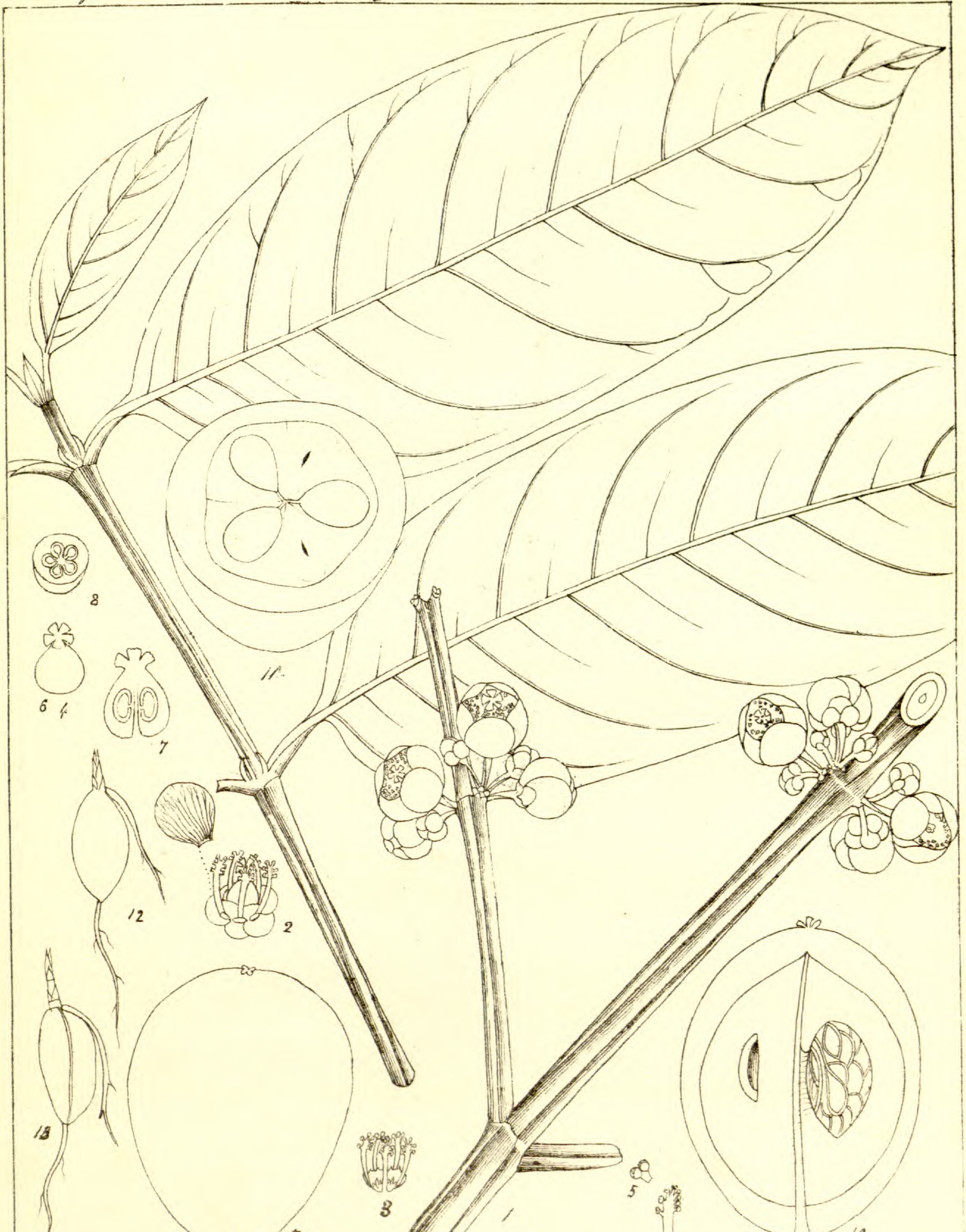
Dunphy Lith.

Rhopala excelsa (Roxb)

Dumphy. Lith.

Rhopala robusta (Roxb.)

Dumphy, Lith.



Dunphy, Lith.

Xanthochymus dulcis (Roxb)

Spermacoce lævis (Roxb)

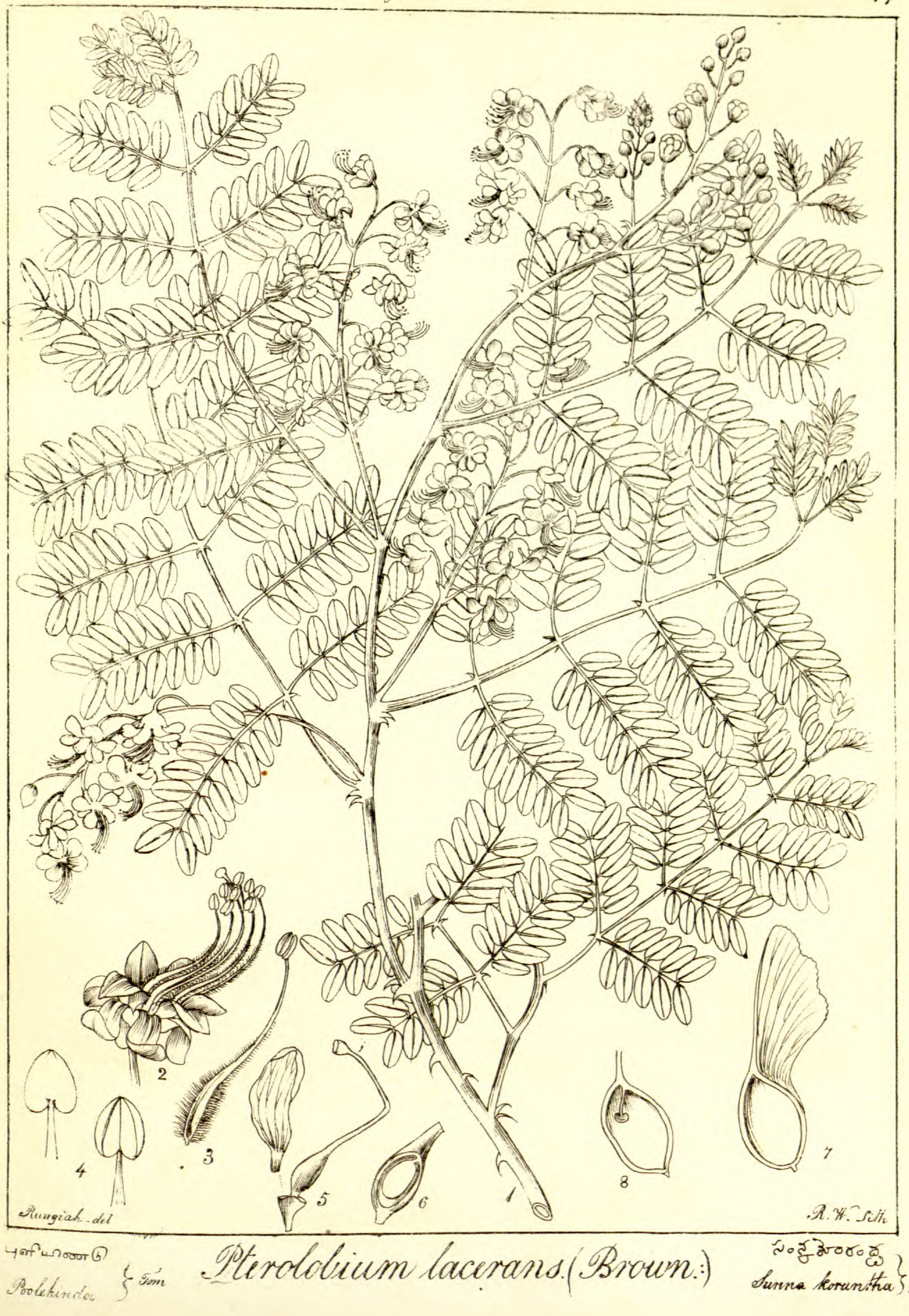
Dunphy, Lith.

Rungiah del. *Winchester Lith.*

அழிஞ்சிமரம்
Aulinjimarum. } *Alangium decapetalum.* (*Lam.*)

மருதமரம்
Maruthymarum

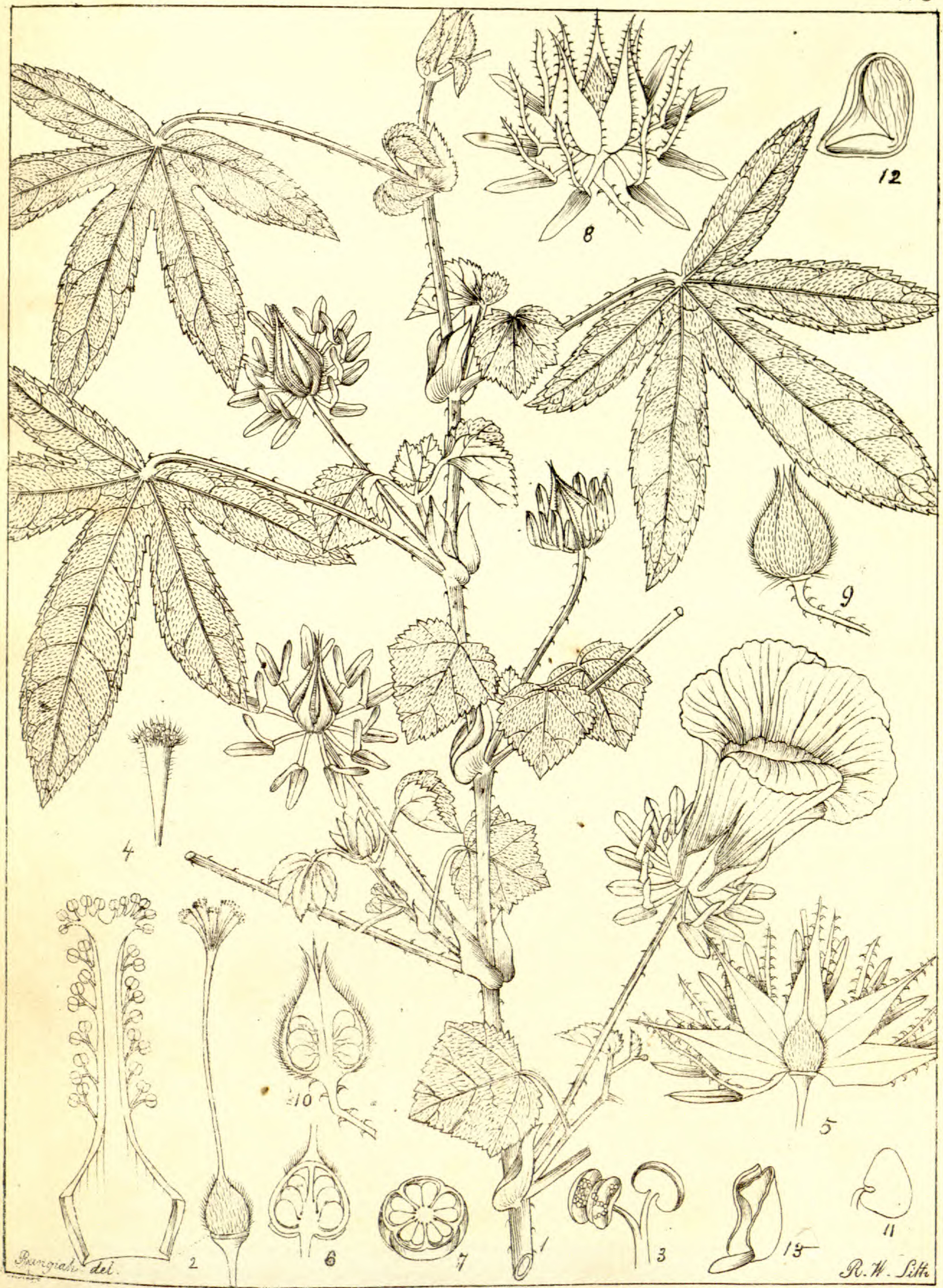
Terminalia tomentosa. (W. & A.:)



புளிபாண்டு
Poolehindoo } Tam

Pterolobium lacerans. (Brown.)

సన్నకొరంఠ
Sunna koruntha } Gen



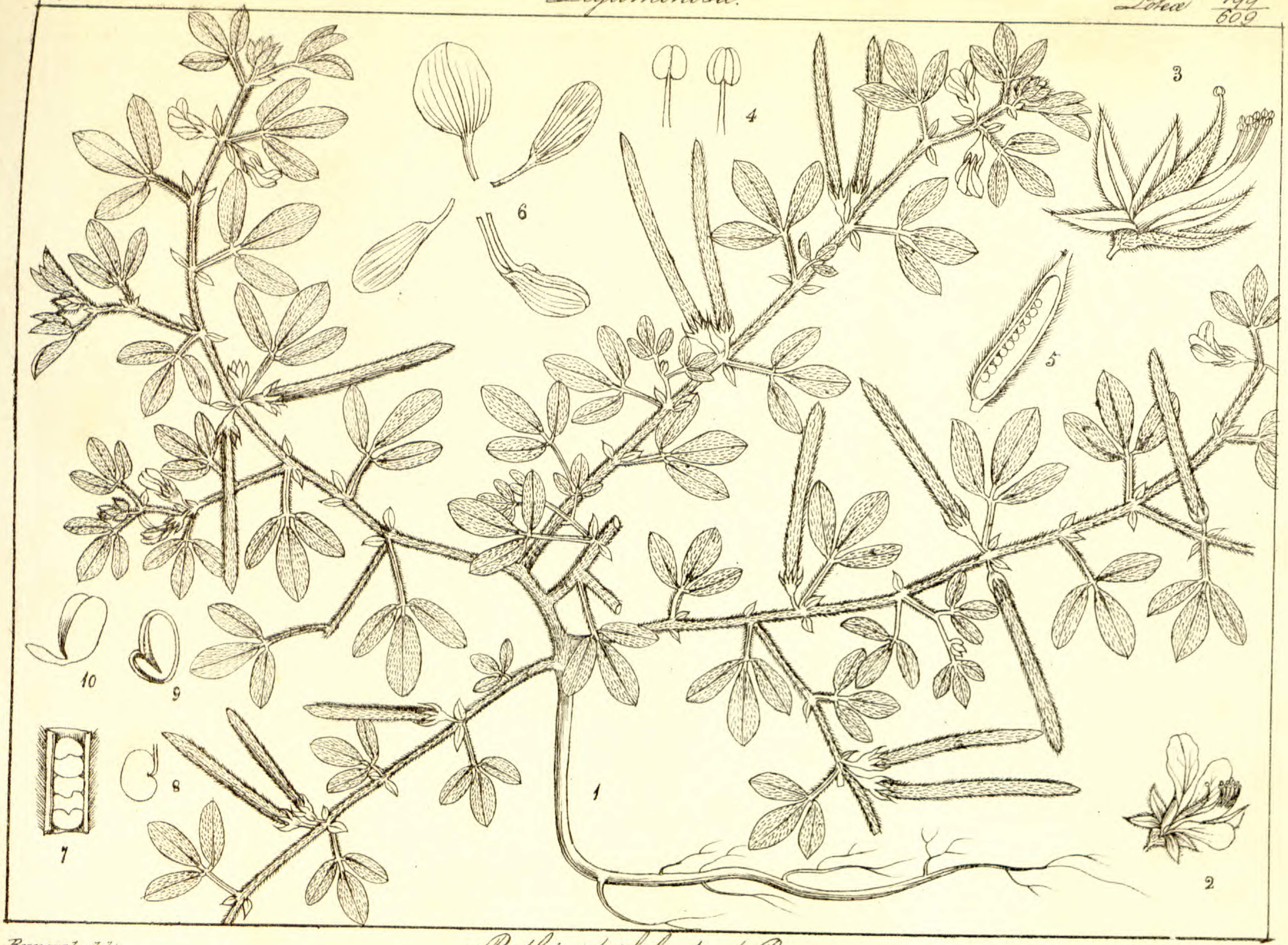
காசலகக்கீரை
Casulkeerie } Tam

Hibiscus Surattensis. (Linn.:)

గోంగూరాకు
Gongekooracoo } Gent

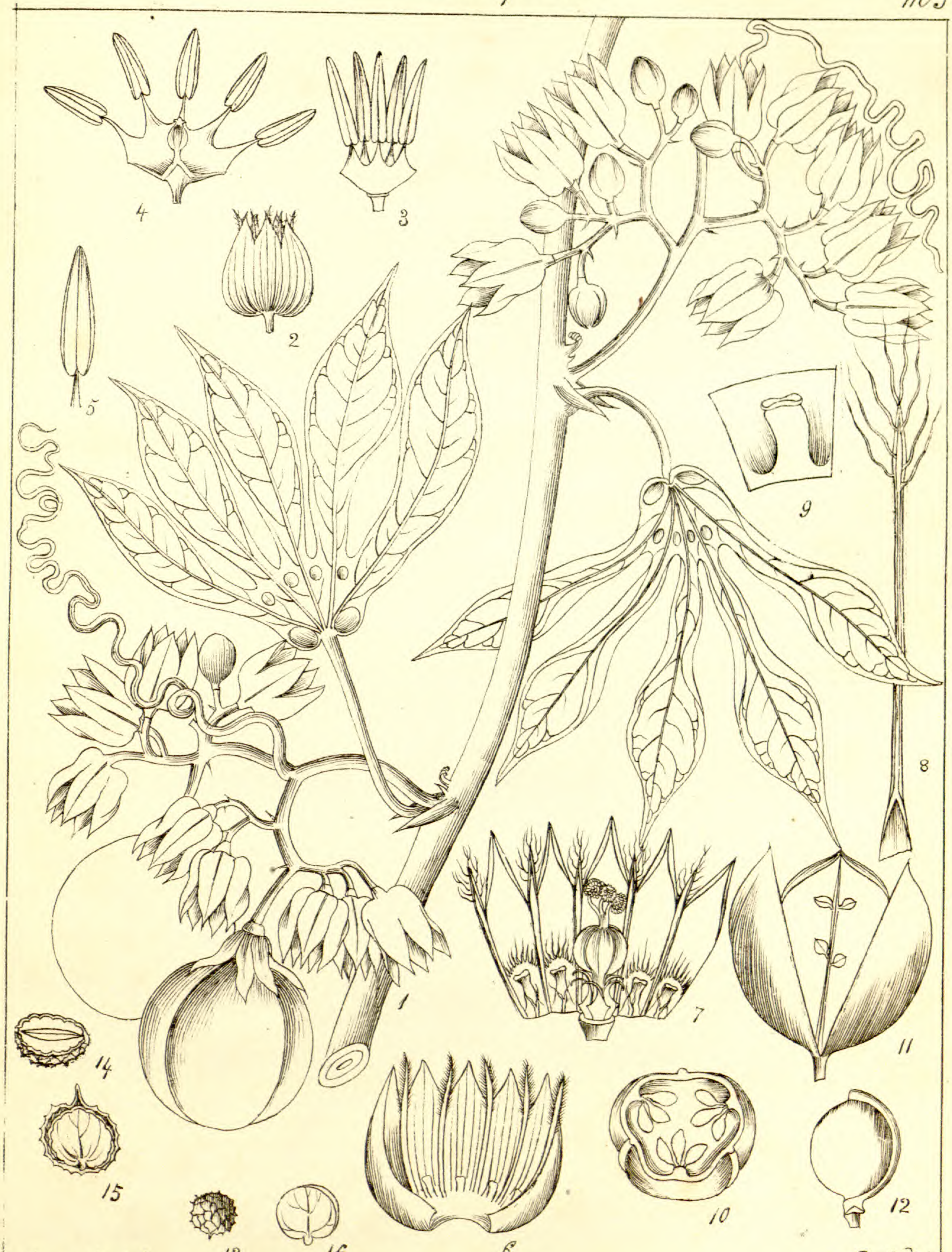
கொரககாபபுளிமரம
Korookapooleemarum

Inga dulcis (Willd)



Rungiah, del. Rothia trifoliata (Pers) Dumphy, Lith.

வடடகிலுகிலுபபை
Vuttykilookeloopy } *Crotalaria verrucosa* (Linn.!:).



Modecca palmata (Lam:)

Phaseolus pulniensis (R.W.)

Rungiah. del. R. W. Lith

Lablab vulgaris. (Savi:)

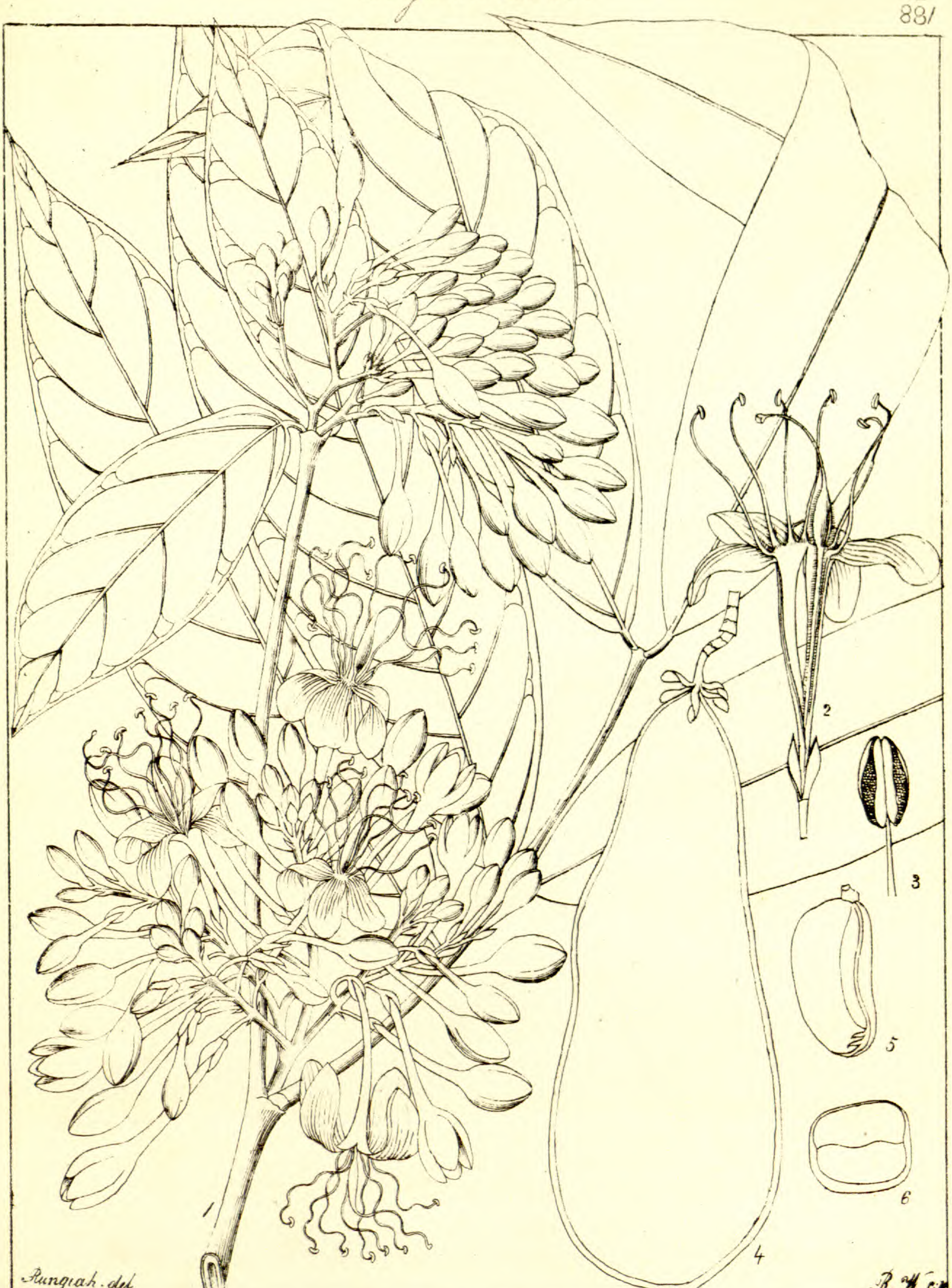
அவரைக்கொடி / Auvary kodee } Tam

చిక్కుడితీగ / Chikkeedeethega } Tel

Rungiah, del. Dumphy, Lith.

Zanthoxylon triphyllum (Juss)

Rungiah del. Monocera ferruginea (R. W.) Dumphy, Lith.



Jonesia Asoca (*Roxb.*:)

Millettia rubiginosa. (W. & A.)

Dumphy, Lith.

Crotalaria obtecta (Graham)

Dunphy lith

Desmodium congestum (Wall.)

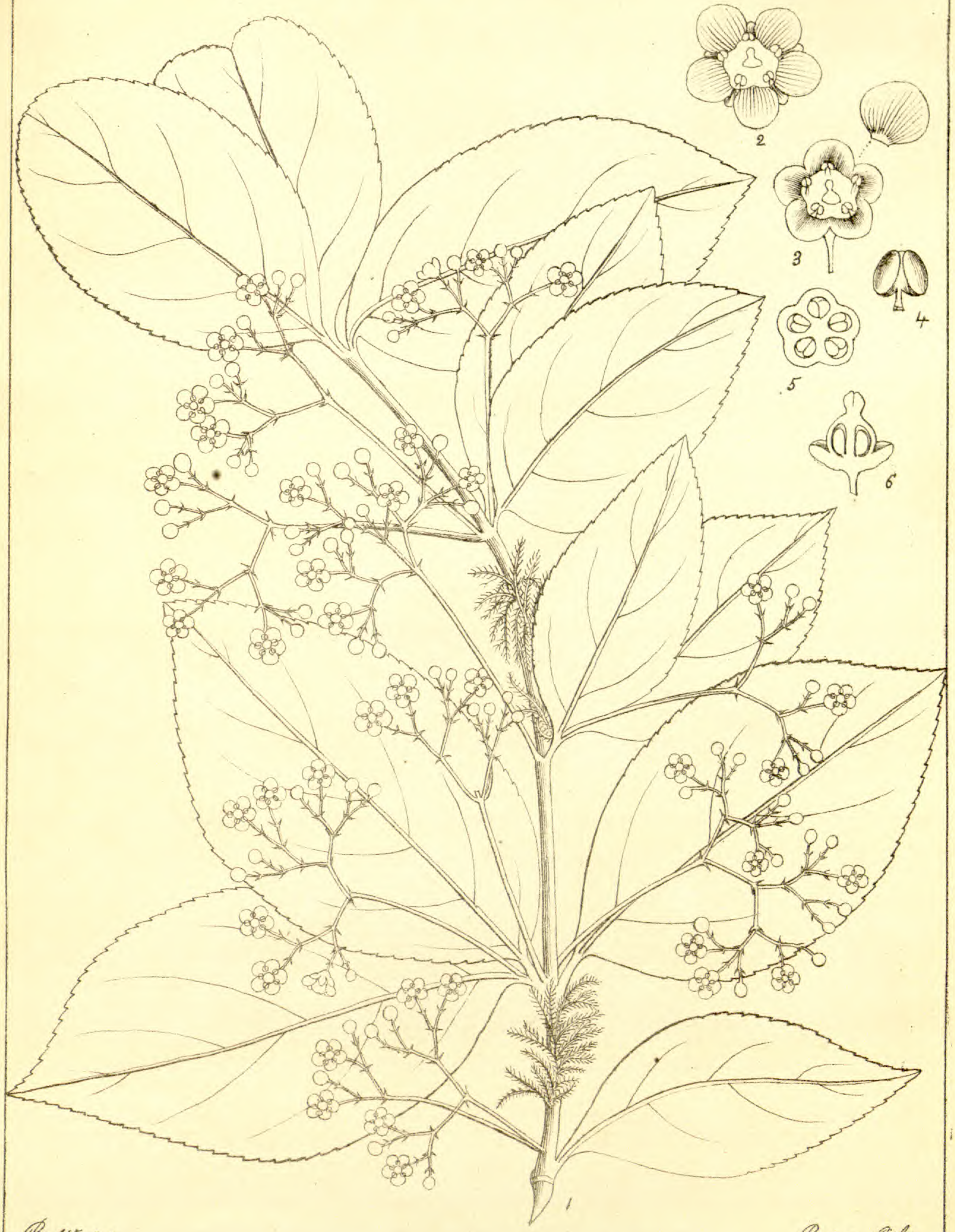
Rungiah. del. R. W. Lith.

Butea parviflora. (Roxb.:)

Quercus semiserrata (R.:)

Quercus lanceæfolia (Roxb.)

Quercus squamata (Roxb:)



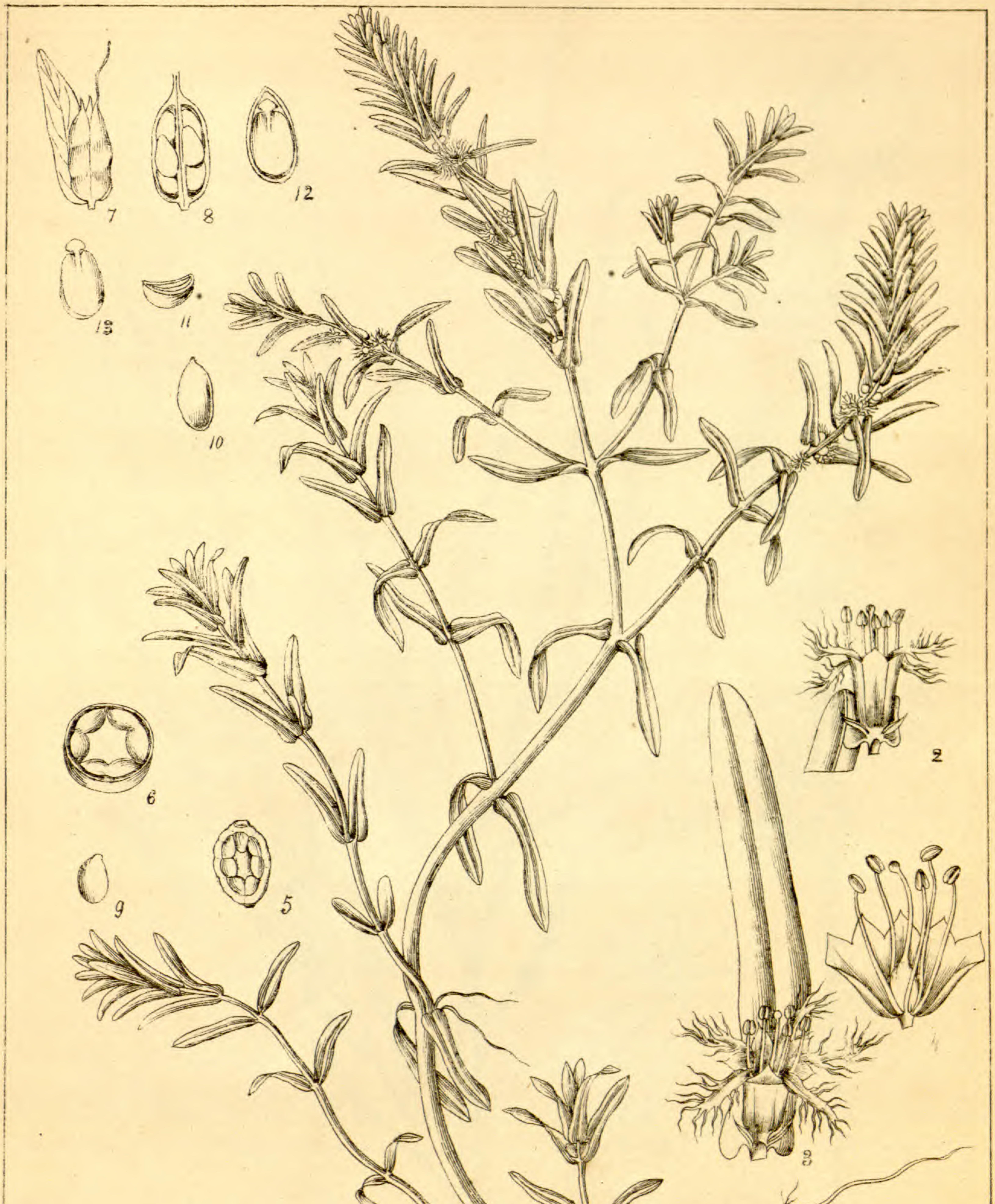
R. W. del. *Romeo. Lith.*

Euonymus crenulatus (Wall)

R.W. del.   Romeo, Lith.

Euonymus Goughii

Jambosa aquea (Dc.:)

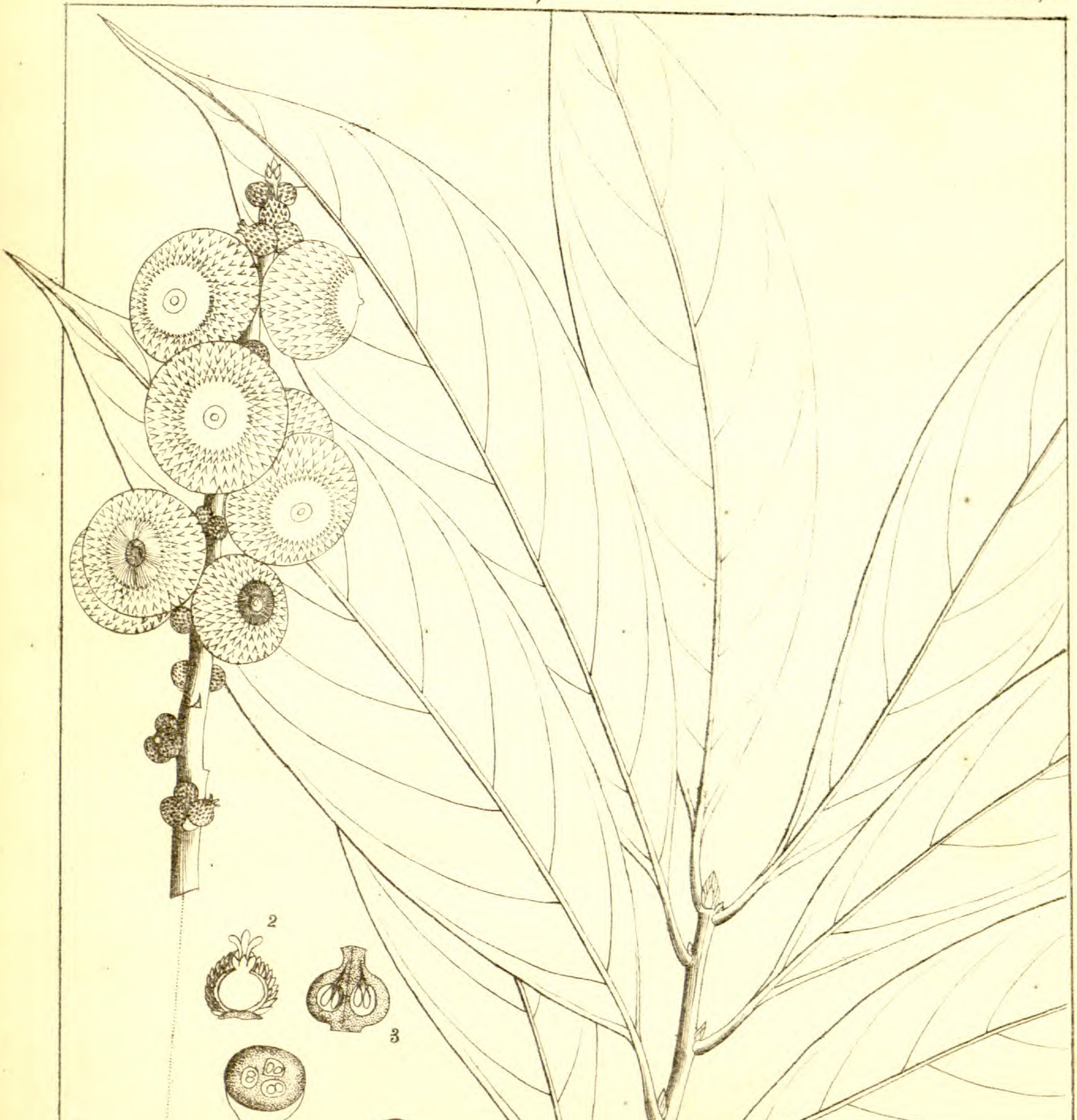


Rungiah. del.

R. W. Lith.

Rotala fimbriata (R. W.:)

Quercus ferox (Roxb.)

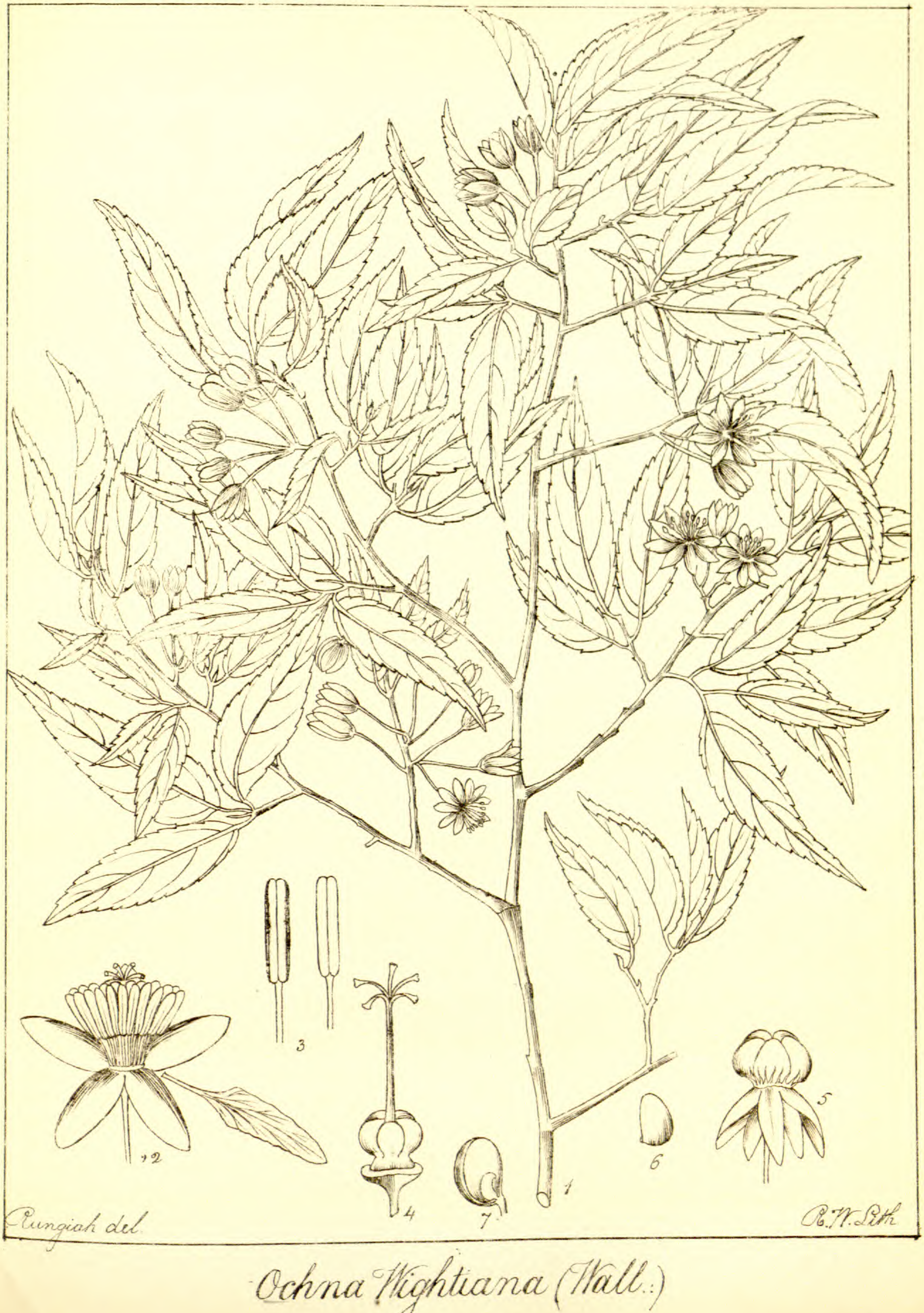


Quercus fenestrata (Roxb.)

Quercus lappacea (Roxb.)

Quercus turbinata (Roxb.)
2 Quercus acuminata (Roxb.)

Elatine (Bergia) æstivosa (W & A.:)



Ochna Wightiana (Wall.)

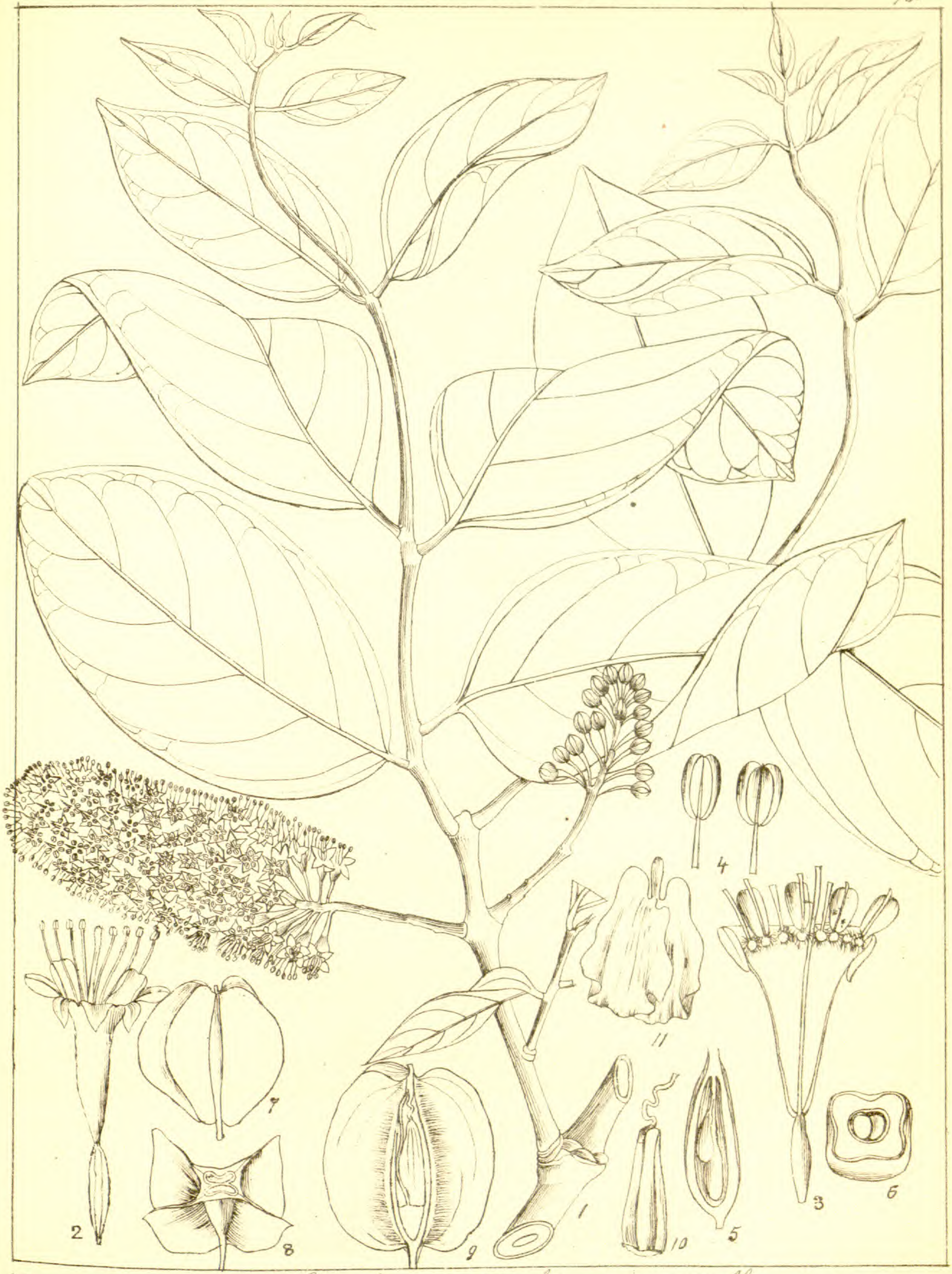
Rungiah, del. Dunphy, Lith.

Agrimonia Eupatorium (Linn)
A. Ceylanica Moon

Rubus rugosus (Sm)

நொக்கட்டமரம்
Nocotahmarum

Eriobotrya Japonica (Lindl.)



Rungiah del.

Combretum Wightianum (Wall)

Dunphy, Lith.

Photinia Lindleyana (W. & A.)

Rungiah. del. R.W. Lith.

Alchemilla vulgaris Linn.
Al. ceylanica Moon.

Rungiah, del. Romeo, Lith.

Rubus gowreephul (Roxb)

Rungiah del. Romeo Lith

Rubus Wallichiania (W & A)

Rungiah, del.

Rubus lasiocarpus (Sm.)

Potentilla Mooniana (R.W.)

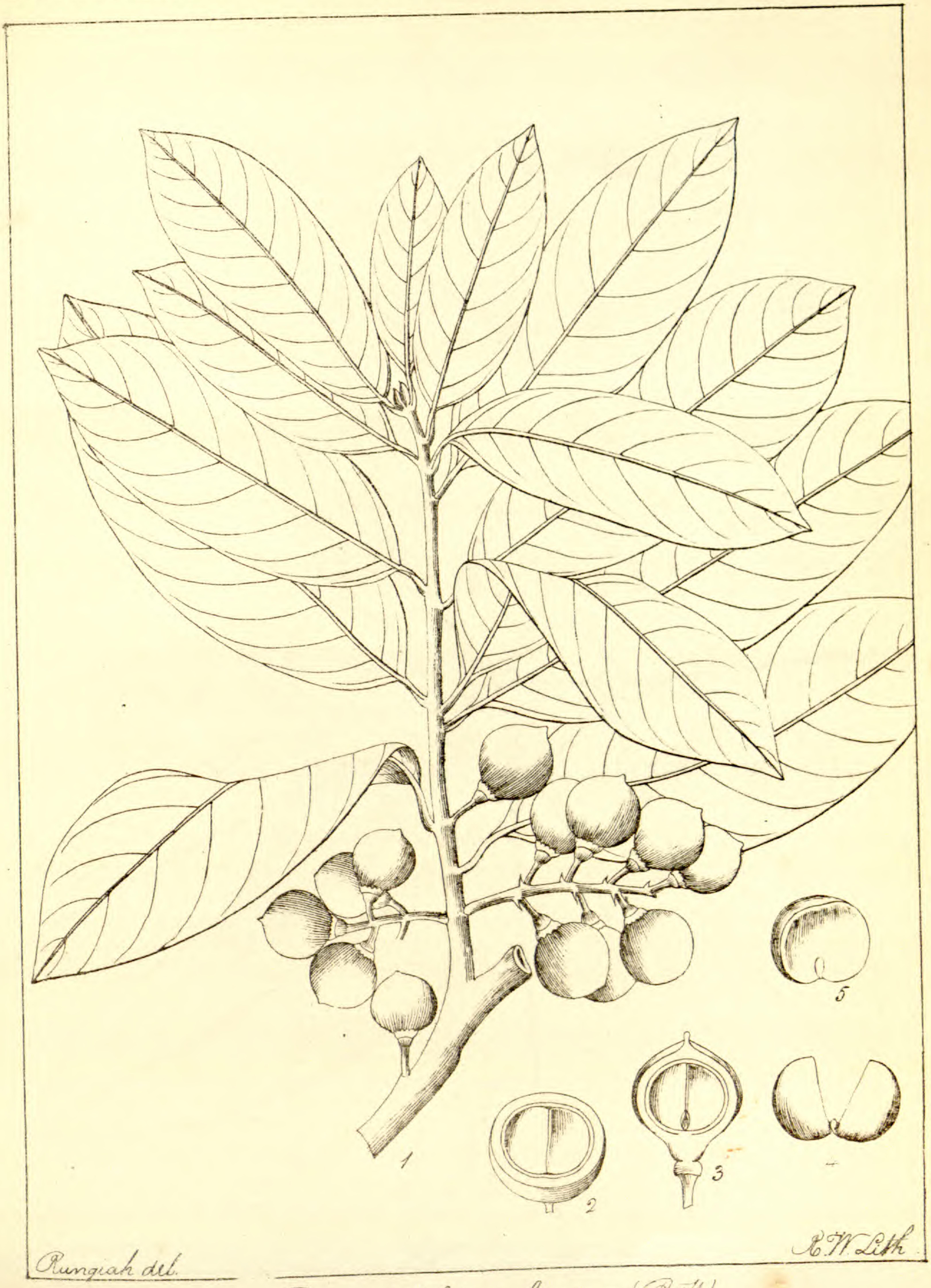
928 X 29

Rungiah del

R. W. Lith.

Rosa involucrata (Roxb.)

Semecarpus Grahamii (R.W.)



Pegia ? Colebrookiana (R.W.)

Rungiah del.

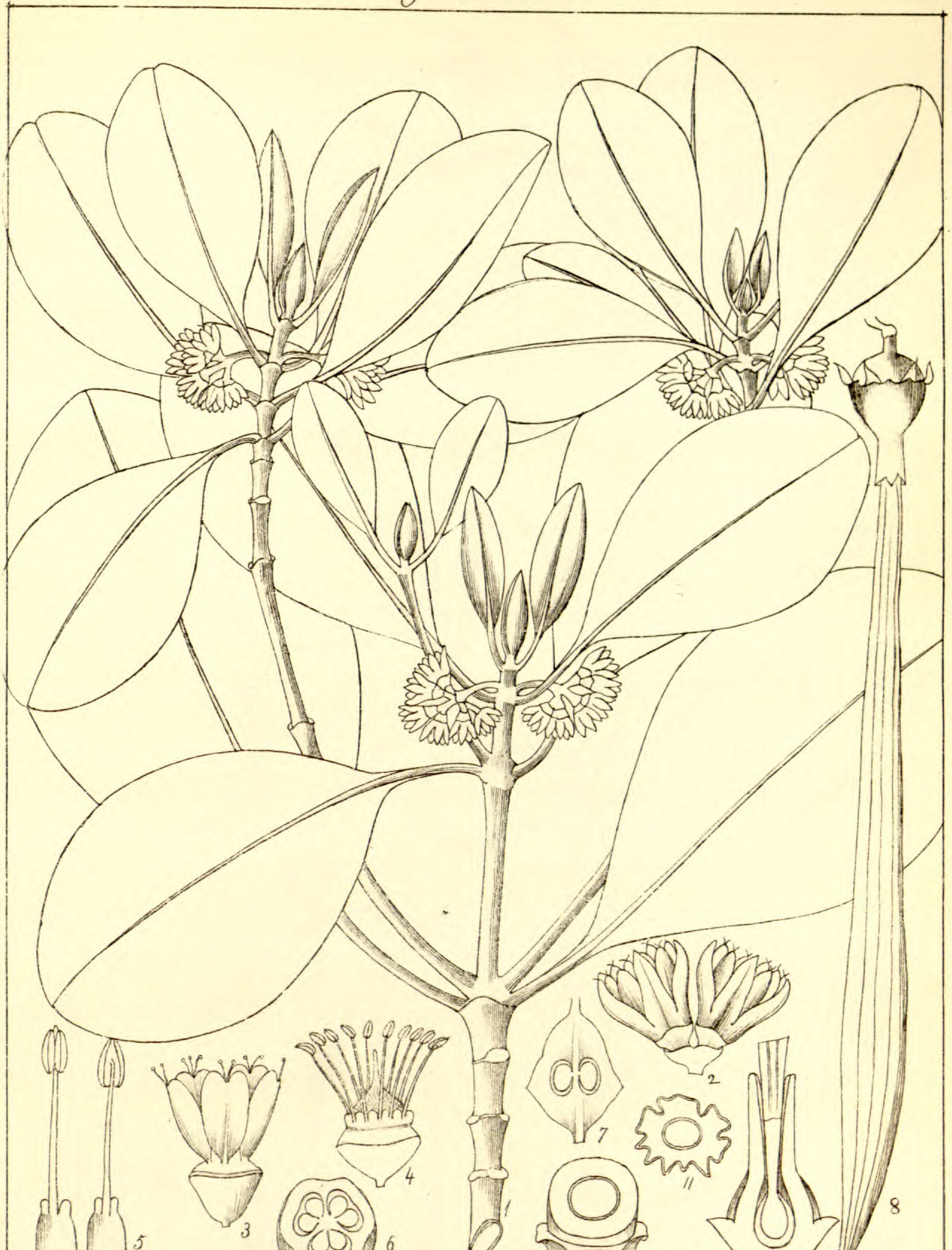
Buchanania lanceolata (R.W.)

R.W. Lith.

Rungiah. del. R.W. Lith

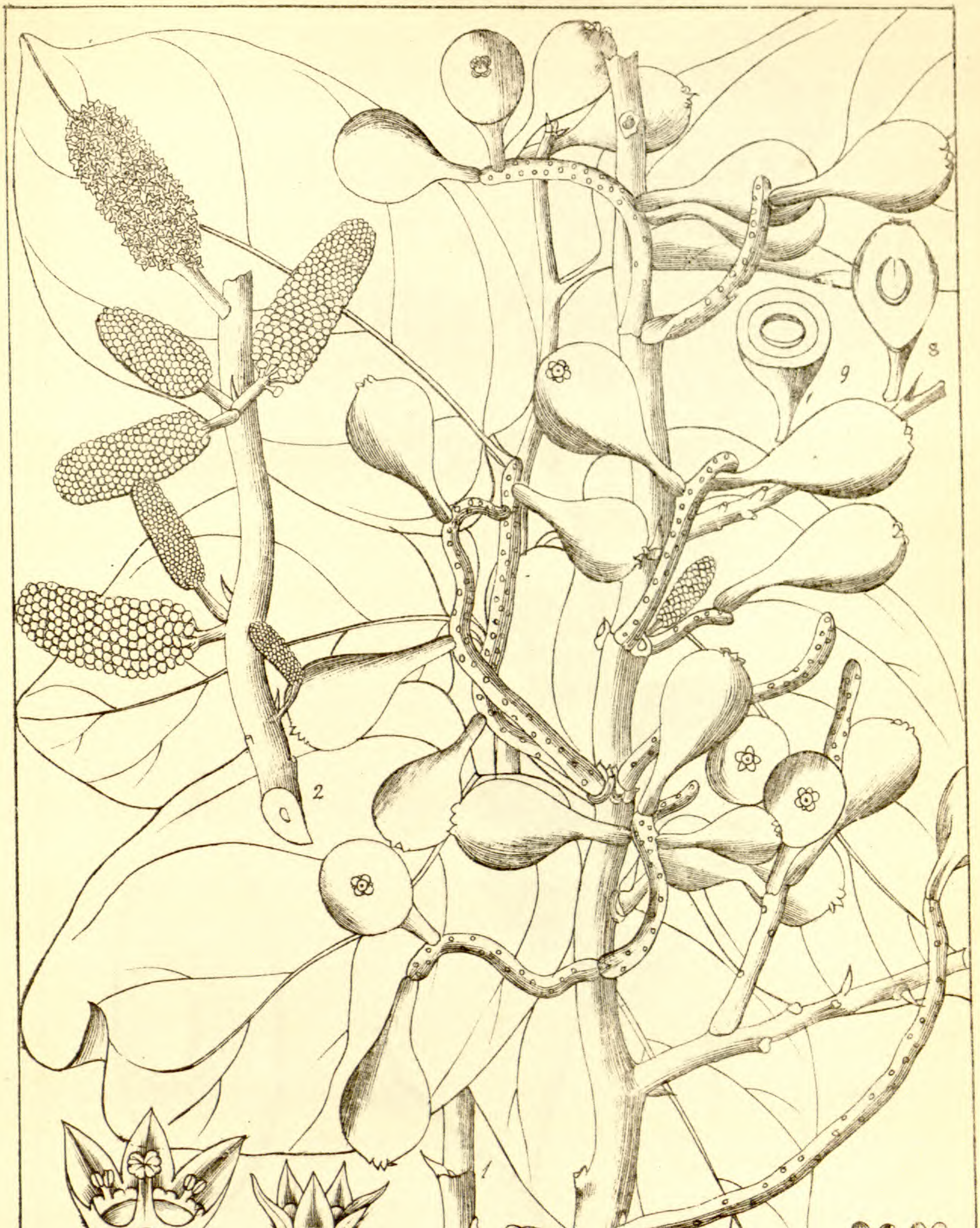
Rhizophora mucronata (Lam.)

A | Bruguiera Rheedii (Blume) B | B. eriopetala W.&A.
B. gymnorhiza W.&A. non Lam



Runyiah del. R.W. Lith.

Ceriops Candolliana (Arn)



Birtee, del. | R. W. Lith.

Scleropyrum Wallichiana (Arn)

Sphærocarya Wallichiana (W. & A.)

Bódlega hallu: Can

Roxburghianæ.

Dalbergia tamarindifolia (Roxb.)

Dalbergia stipulata (Roxb)

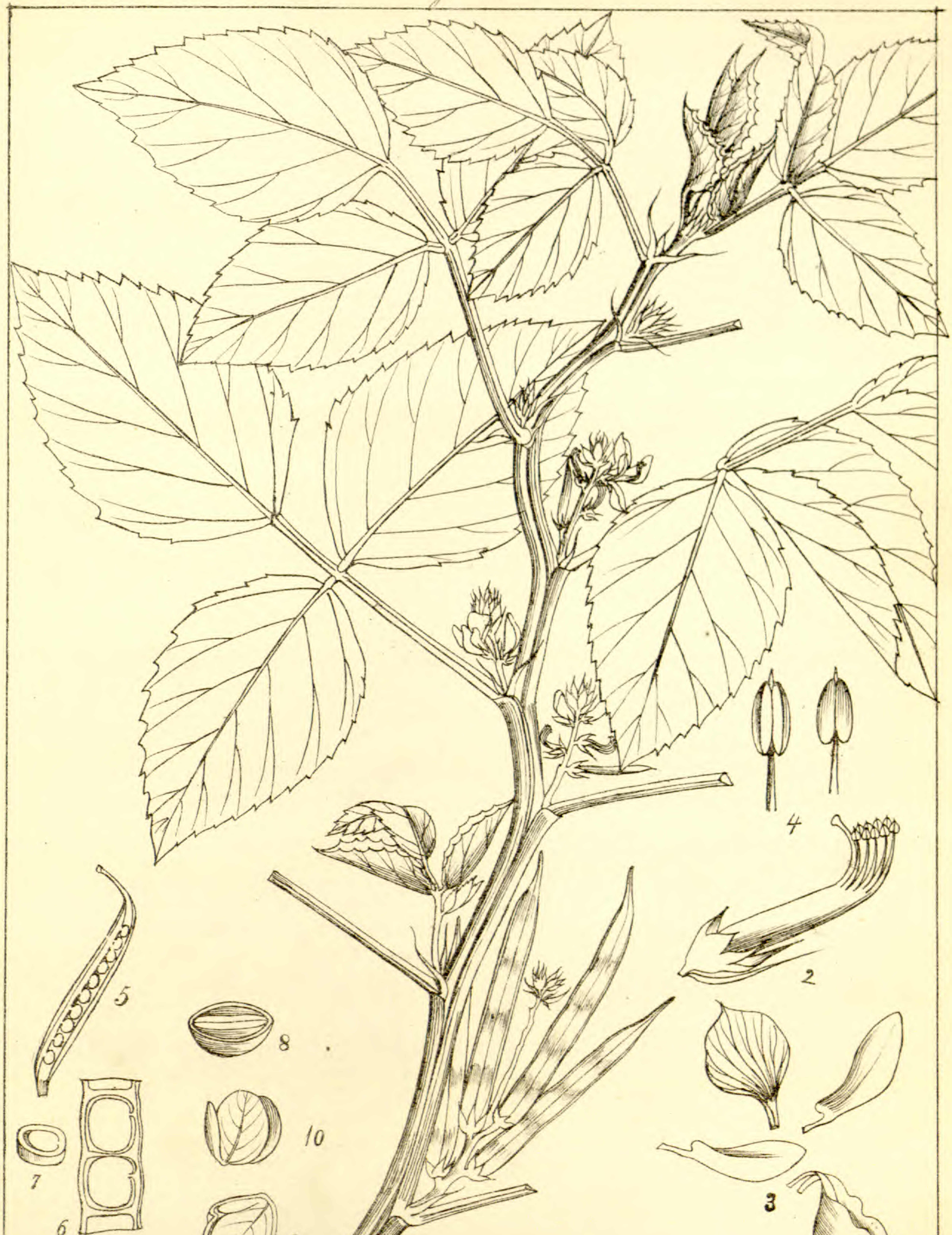
Dalbergia robusta (Roxb)

Sophora robusta (Roxb)

Pterocarpus dalbergioides (Roxb)

Roxburghianæ

Erythrina ovalifolea (Roxb)



Cyamopsis psoraloides (D.C.)

Rungiah del.

Phaseolus psoraleoides (W. & A.)

Alysicarpus pubescens (Law's M.ss.)

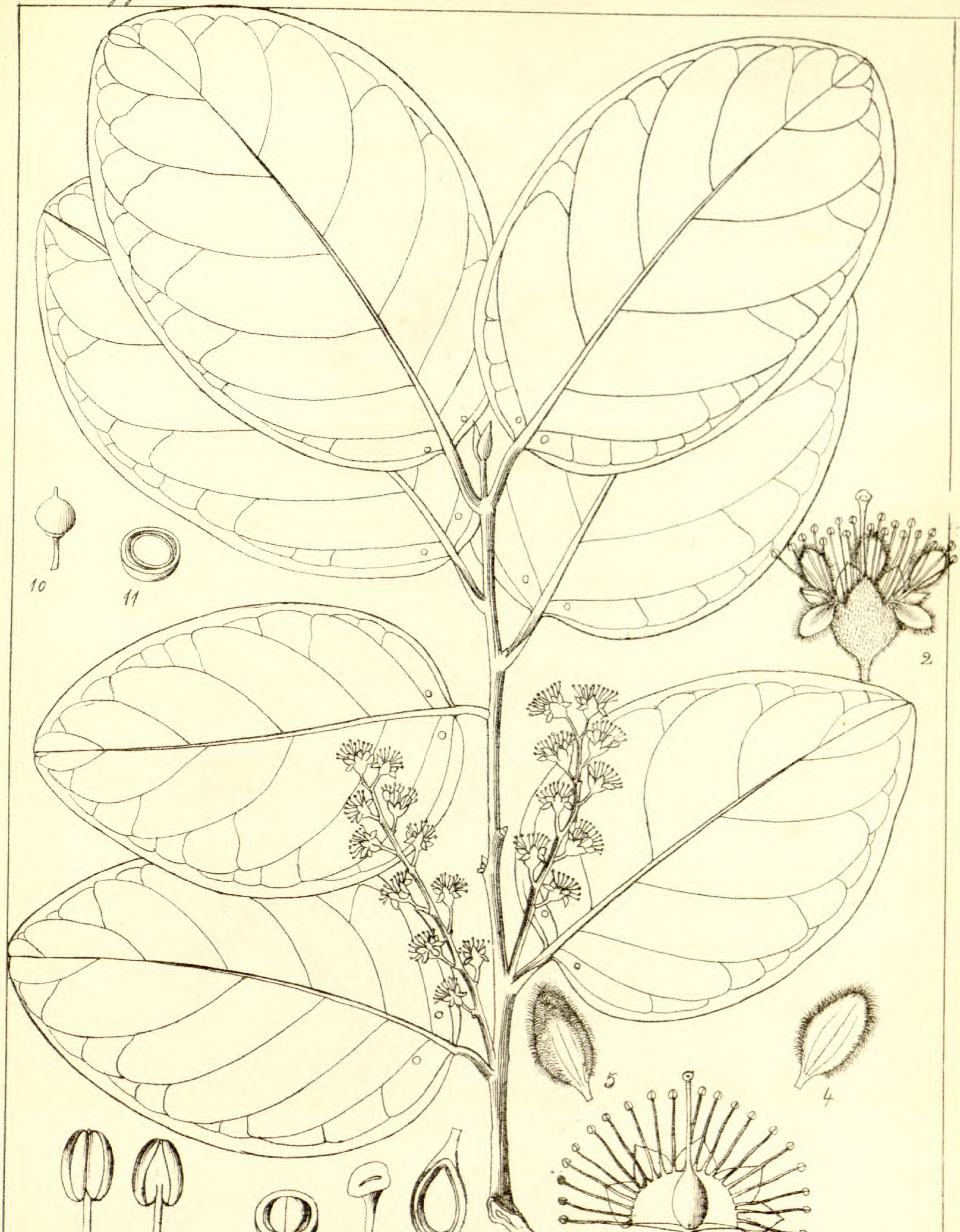
Rungiah. del. Alysicarpus longifolius (W. & A.)

Cassia bacillus (Roxb.)

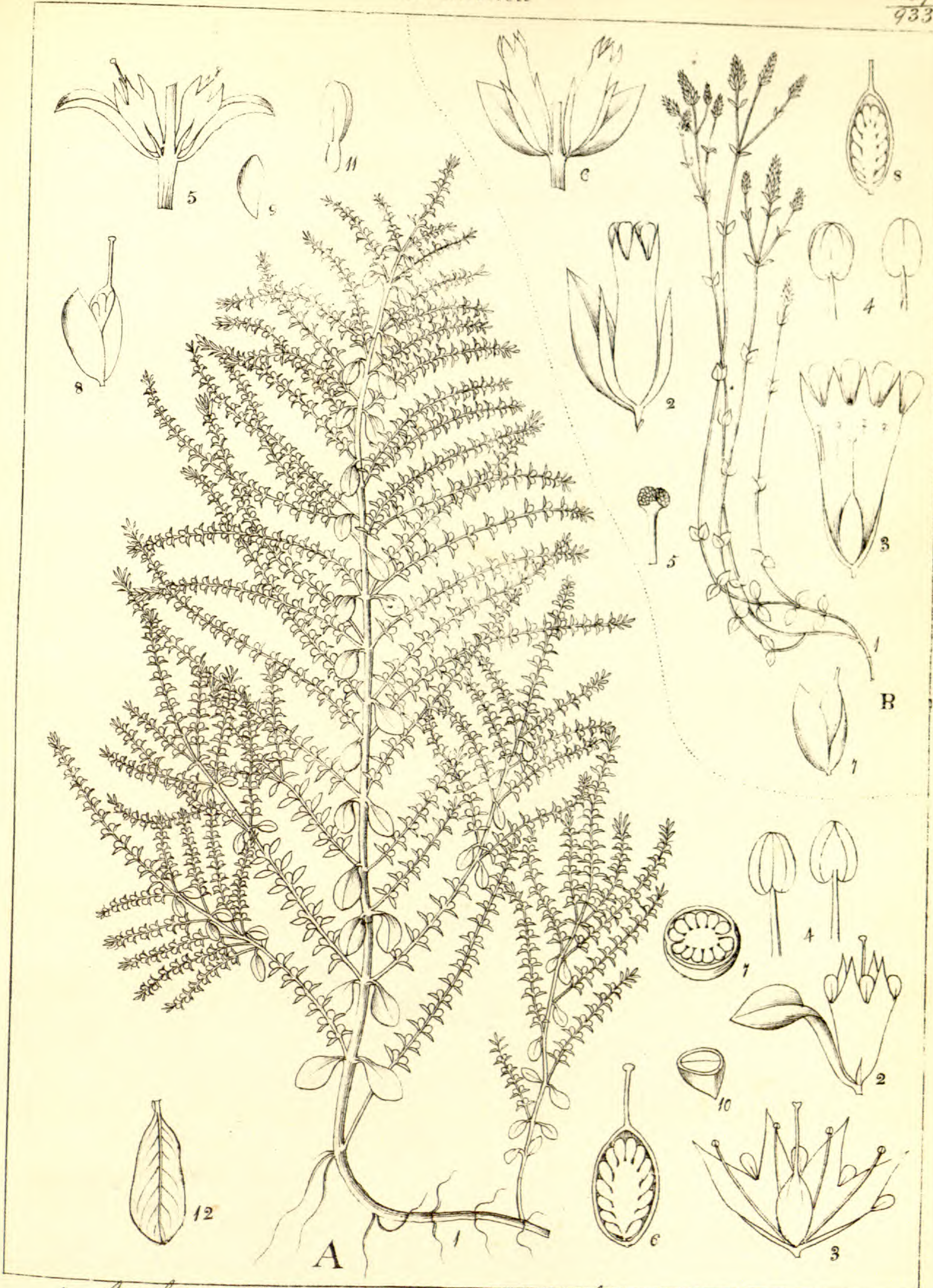
Cassia alata (Linn.)

Acrocarpus fraxinifolius Arn

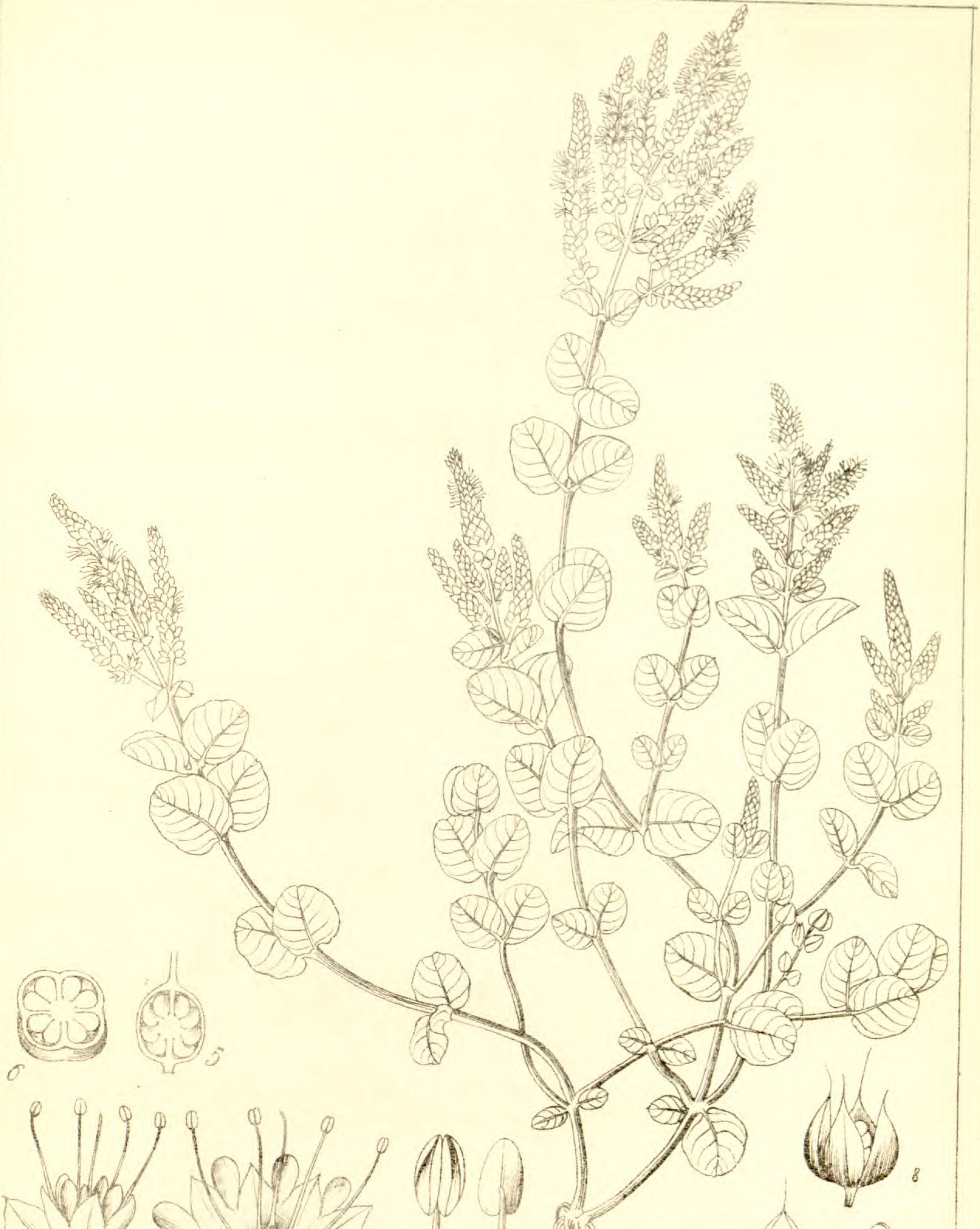
Sphærocarya edulis (Wall.)



Polyodontia? Ceylanica (R.W.)

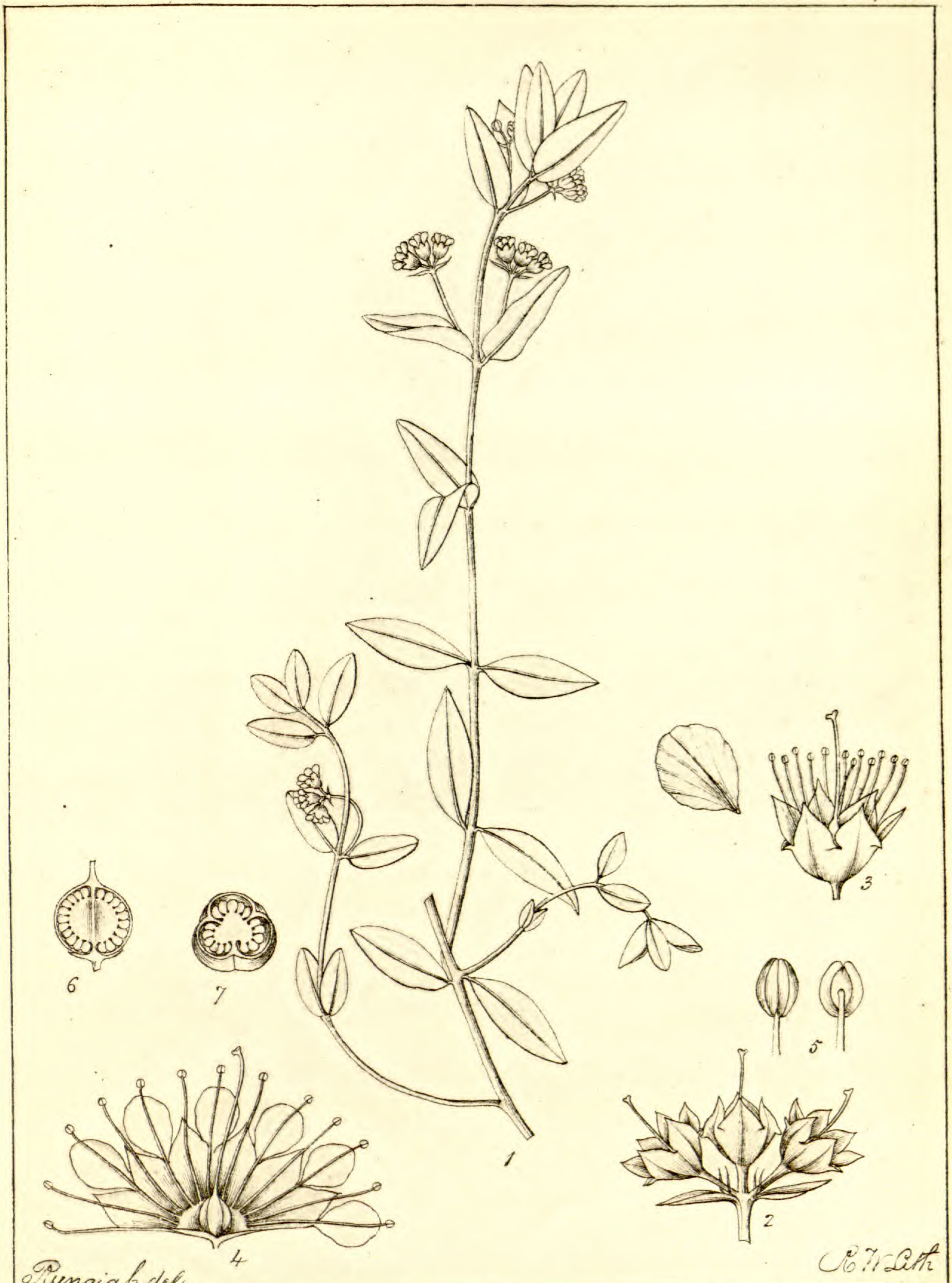


A. *Ameletia indica* (D.C) | B. *Ameletia tenuis* (R.W)



Rungiah, del. Ronzo, Lith.

Ameletia rotundifolia, (R. W.)
Ammannia rotundifolia (Roxb.)



Nesaa triflora (Kunth)

A Rotala verticillaris (Linn) B Rotala Roxburghiana (R.W.)
Ammannia pentandra (Roxb)

Roxburghiana

Dalbergia reniformis (Roxb)

Roxburghianæ

Kaogroom, selhetee   Dalbergia rimosa (Roxb.)

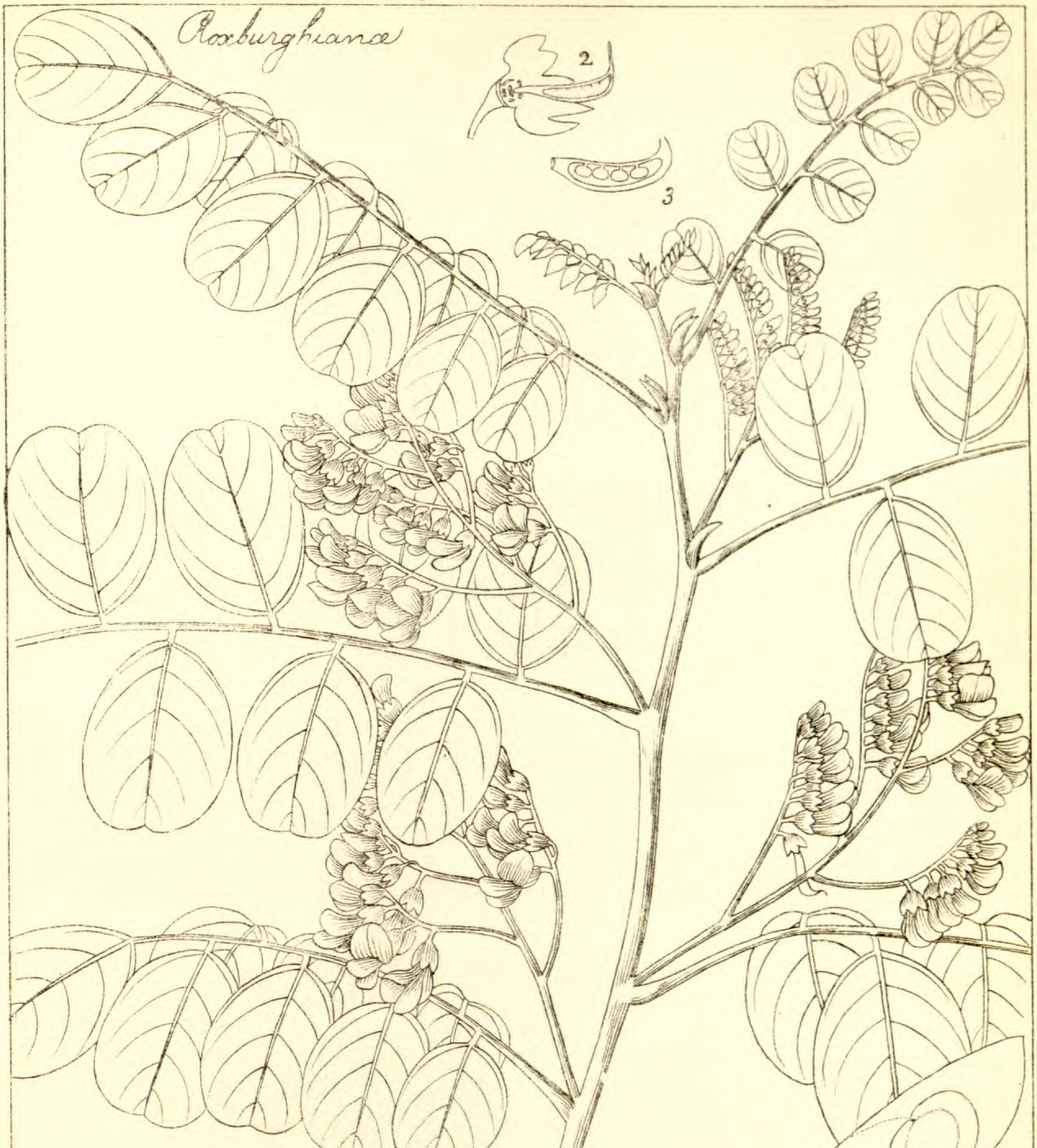
Roxburghiana

Bauhinia semibifida (Roxb.)

Bauhinia scandens (Roxb)

Roxburghiana

Dalhousiea bractiata (Wall)
Podalyria bractata (Roxb)



Dalbergia frondosa (Roxb.)

Flemingia Strobilifera Brown
Hedysarum Strobiliferum (Roxb)

Roxburghiana.

Flemingia bracteata
Hedysarum bracteatum (Roxb.)

Cassia rhombifolia (Roxb.)

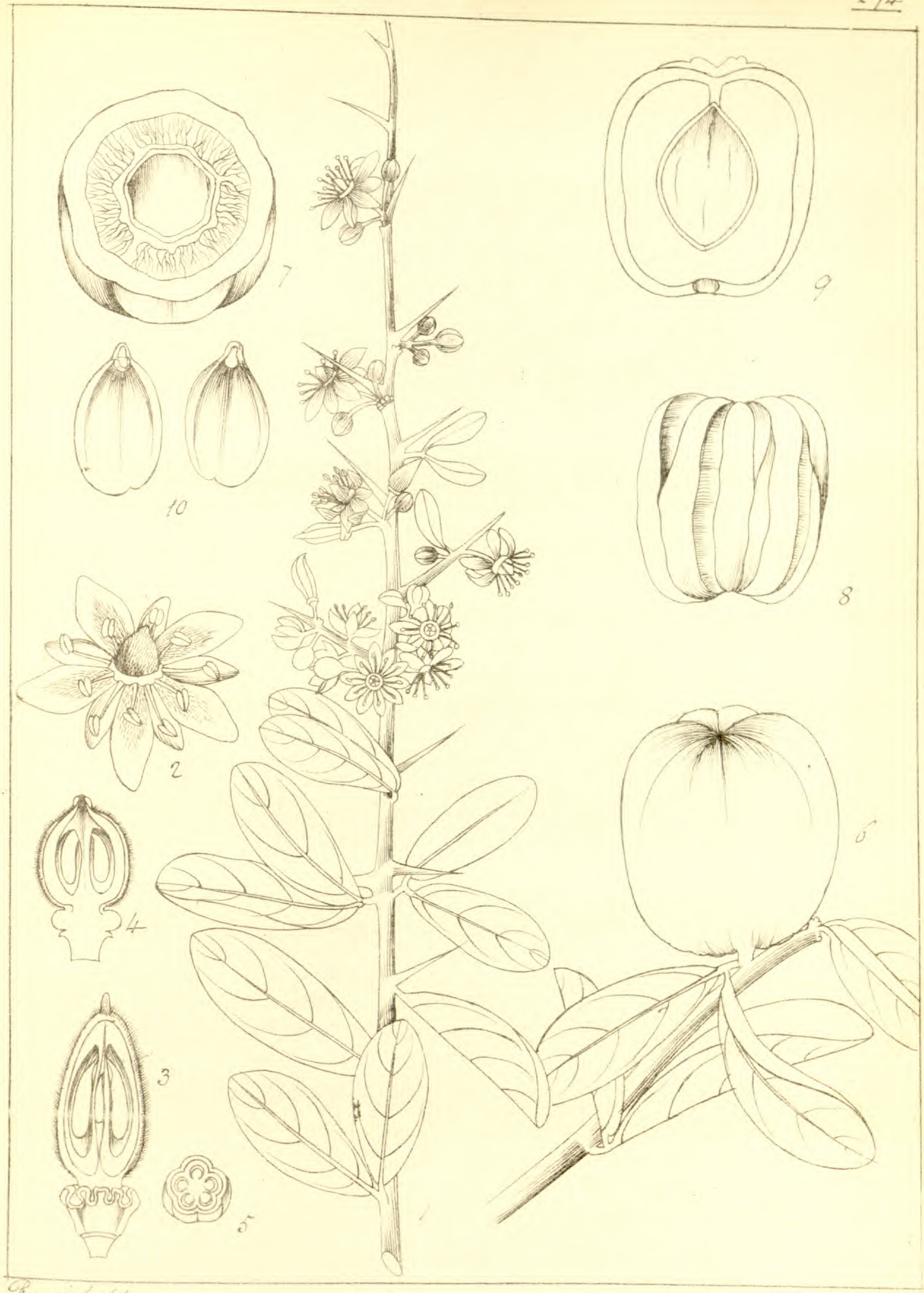
Roxburghiana

Desmodium latifolium (D. C.)
Hedysarum latifolium (Roxb.)

Desmodium Gangeticum (D.C)
Hedysarum Gangeticum (Roxb)

Desmodium latifolium
Hedysarum collinum (Roxb.)

Crotalaria bracteata (Roxb.)



Rungiah del.

Balanites ægyptiaca. (D. C.)

கொடிப்புங்கு } Tam.
Codeepoongoo

Brachypterum scandens (Benth.)
Dalbergia scandens (Roxb.)

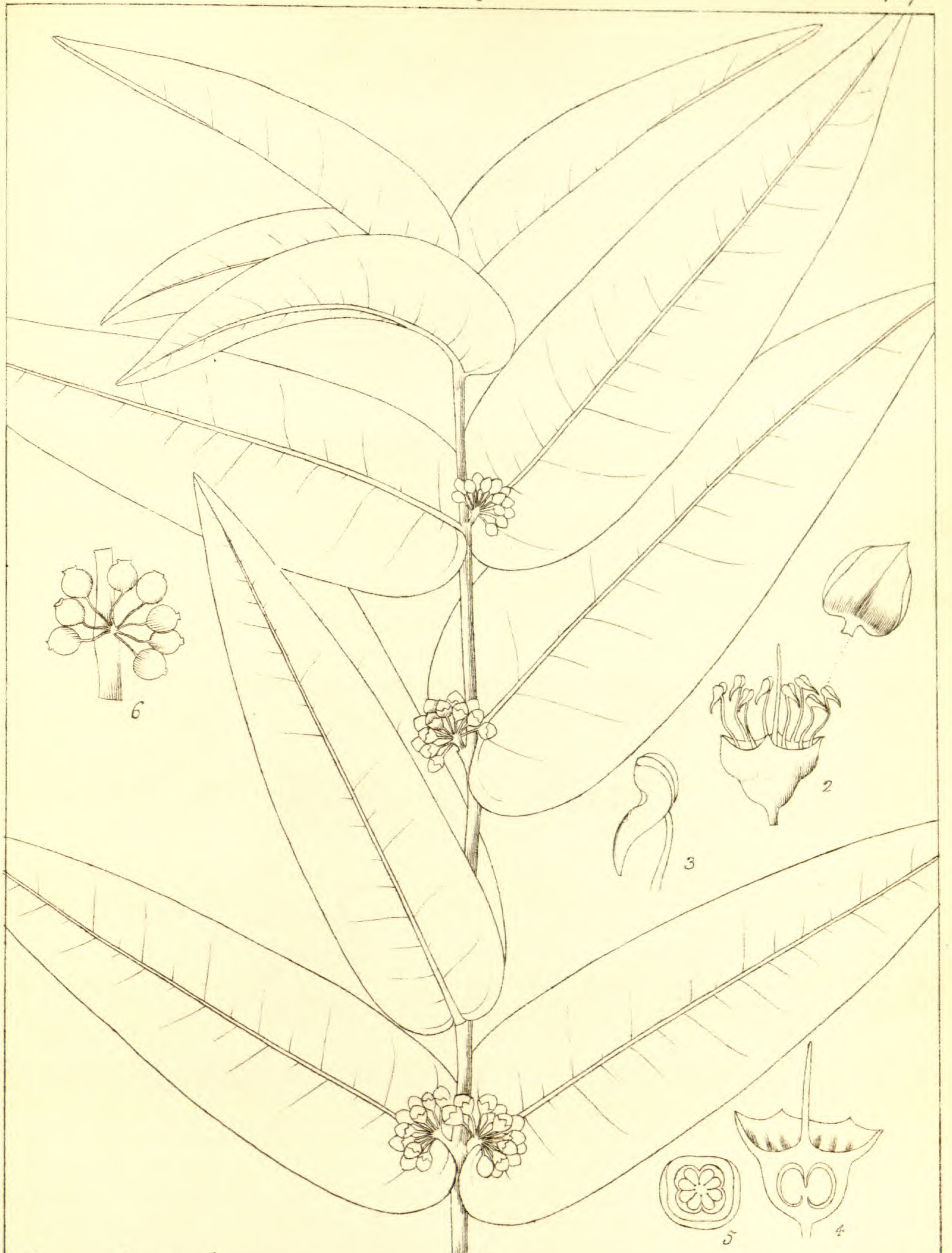
Rungiah del.

Memecylon angustifolium. (R. W.)

Rungiah del.

Memecylon Jambosioides (R. W.)

Memecylon Heyneanum (Benth)



Memecylon amplexicaule (Roxb)

Rungiah, del.

Dunphy, Lith.

Mucuna utilis (Wall.)

பூனைஅவரைக்காய் } Tam
Poona Avarakie }

H. D. Alves, del.

Bupleurum plantaginifolium (R. W.)

Rungiah; del. Remes. Lith.

Zizyphus glabrata (Heyne)

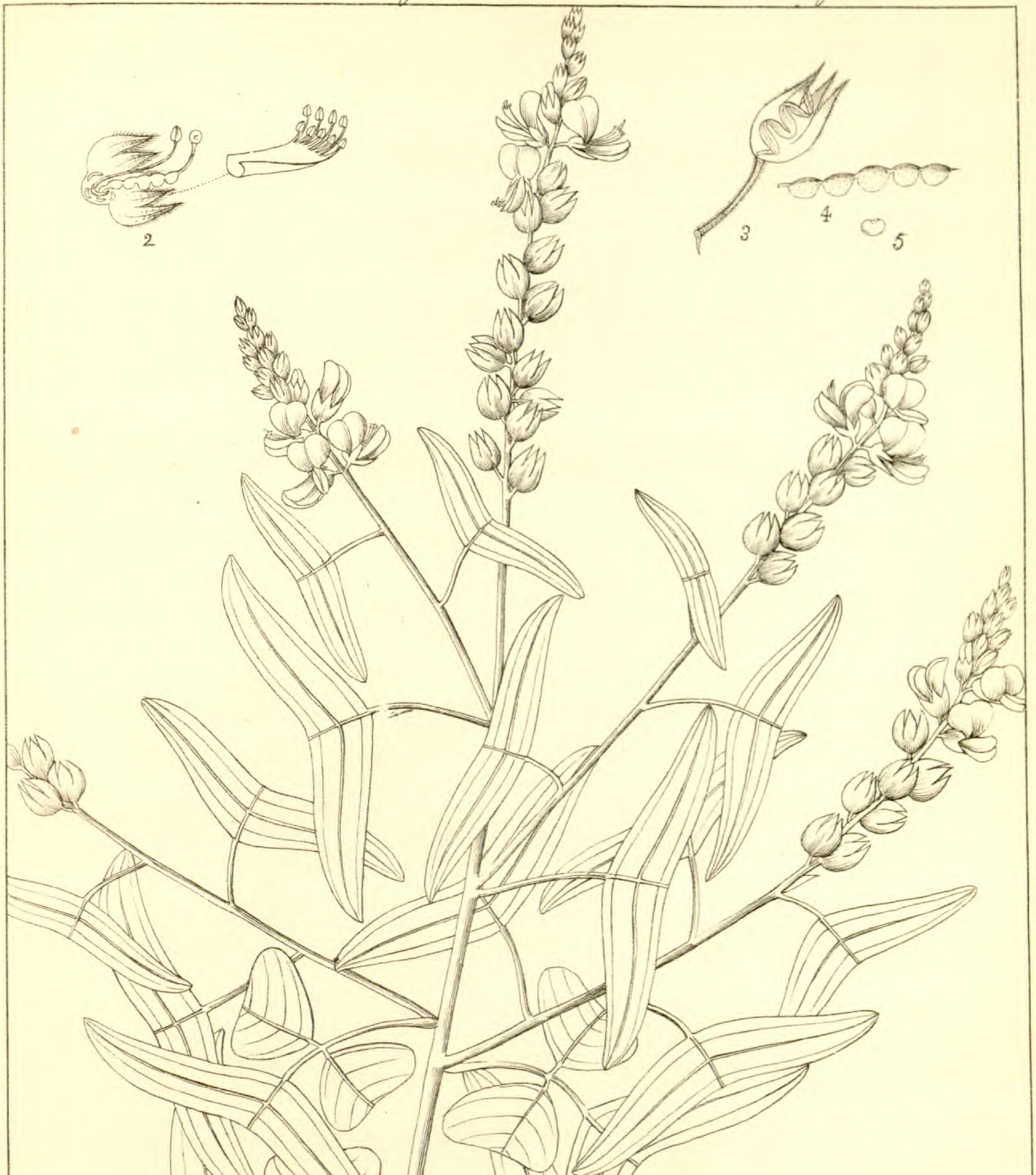
Rungiah, del. Dunphy, Lith.

Nomismia nummularia (W. & A.)

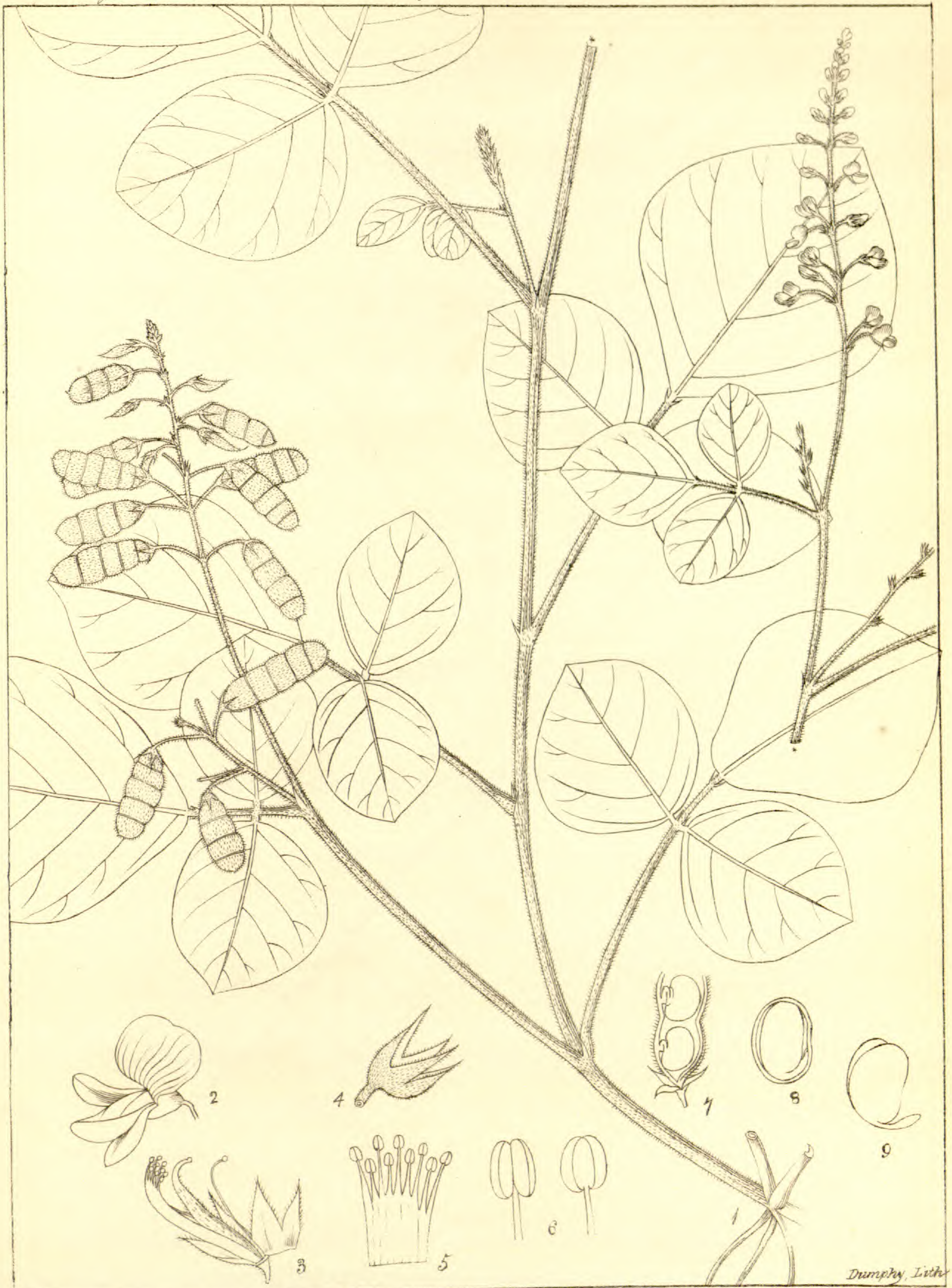
Roxburghianæ.

Uraria hamosa (Wall)
Hedysarum hamosum (Roxb)

Papilionaceæ *Leguminosæ* *Hedysareæ*



Lourea Vespertilionis (Desv)
Hedysarum Vespertilionis (Roxb)



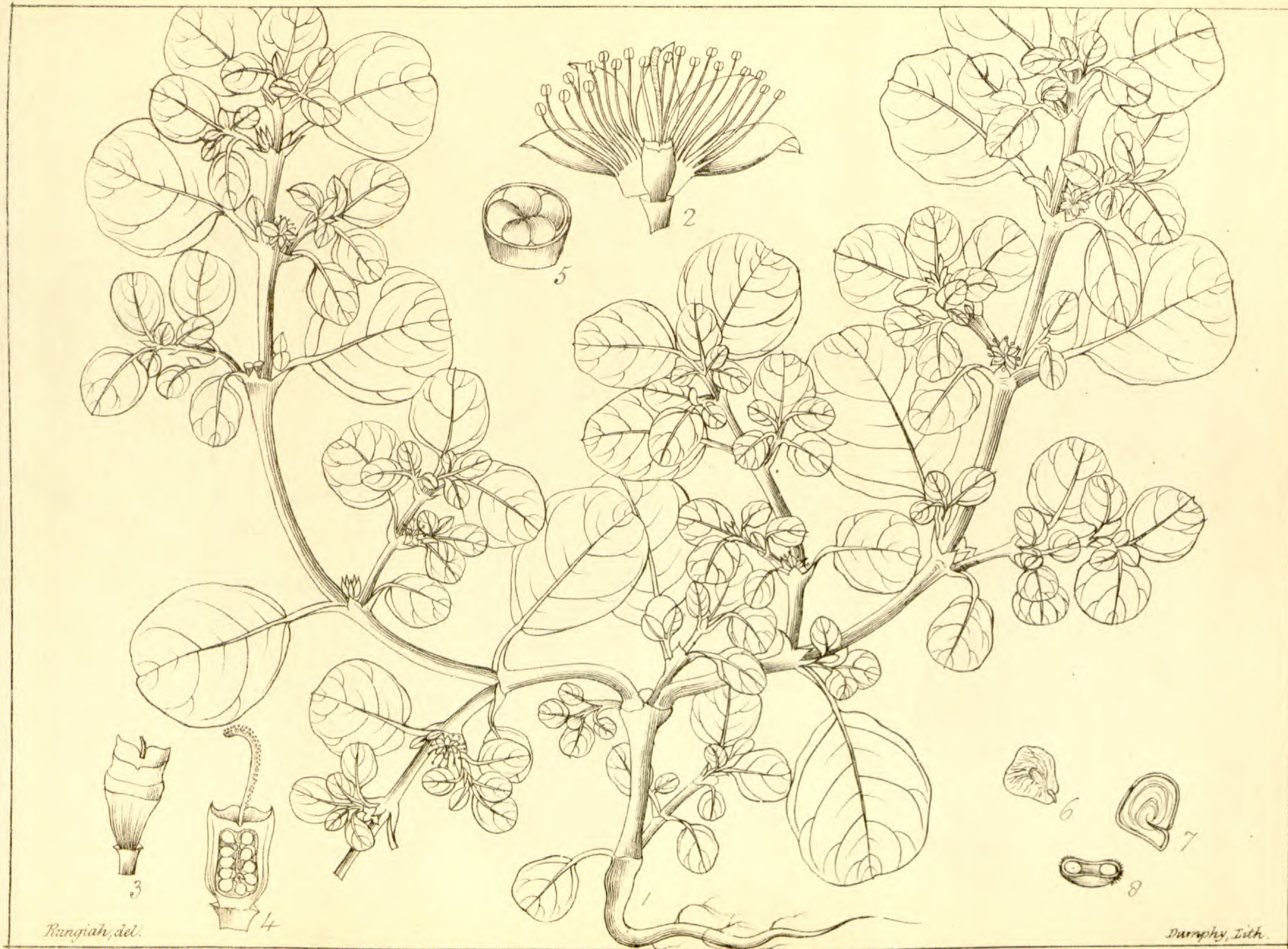
Dissect: Rungiah, del.

Pseudarthria viscida (W & A.)
Hedysarum viscidum (Roxb.)

Rungiah, del Dumphy, Lith.

Cleome aspera (Koen)

Molay varenaypoondoo } Tam.



Rangiah, del.

Dunphy, Lith.

Trianthema obcordata (Roxb.)

Mookurruttay poondoo } Tam:

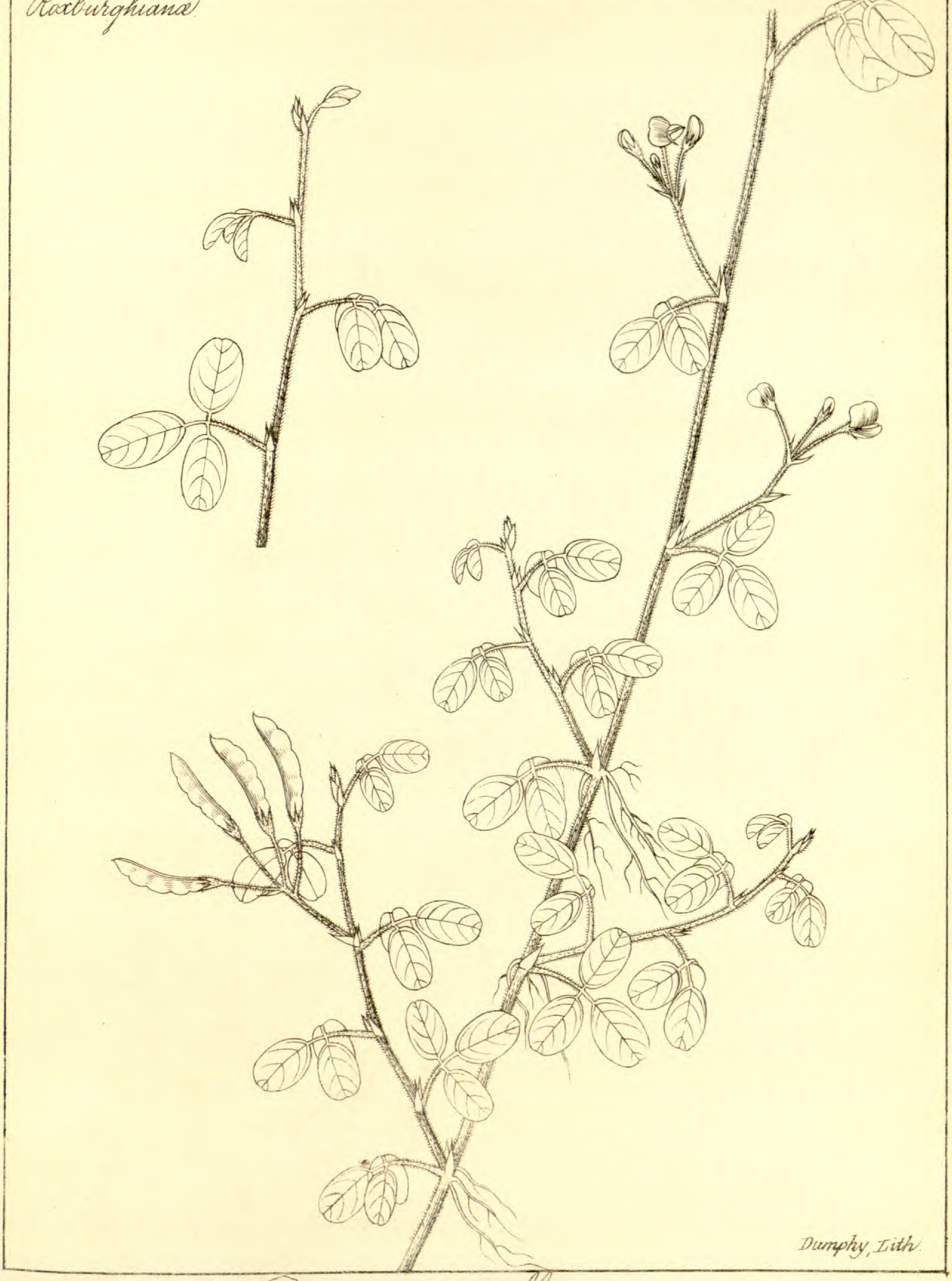
Audekaymamedæ } Tel:

Roxburghianæ.

Uraria lagopoides (D.C)
Hedysarum lagopoides (Roxb.)

Uraria alopecuroides.
Hedysarum alopecuroides (Roxb)

Roxburghianæ.



Dumphy, Lith.

Desmodium triflorum a
Hedysarum reptans (Roxb.)

Roxburghianæ

Dumphy lith.

Desmodium biflorum D.C.B.
Hedysarum biflorum (Roxb.)

Roxburghianæ

Desmodium quinqueangulare
Hedysarum quinqueangulatum (Roxb.)

Dumphy, Lith.

Roxburghianæ.

Dumphy Lith.

Desmodium gyrans (D.C.)
Hedysarum gyrans (Roxb.)

Nomismia capitata (W & A)

Rungiah, del.

Dumphy, Lith.

Trianthema decandra (Linn)

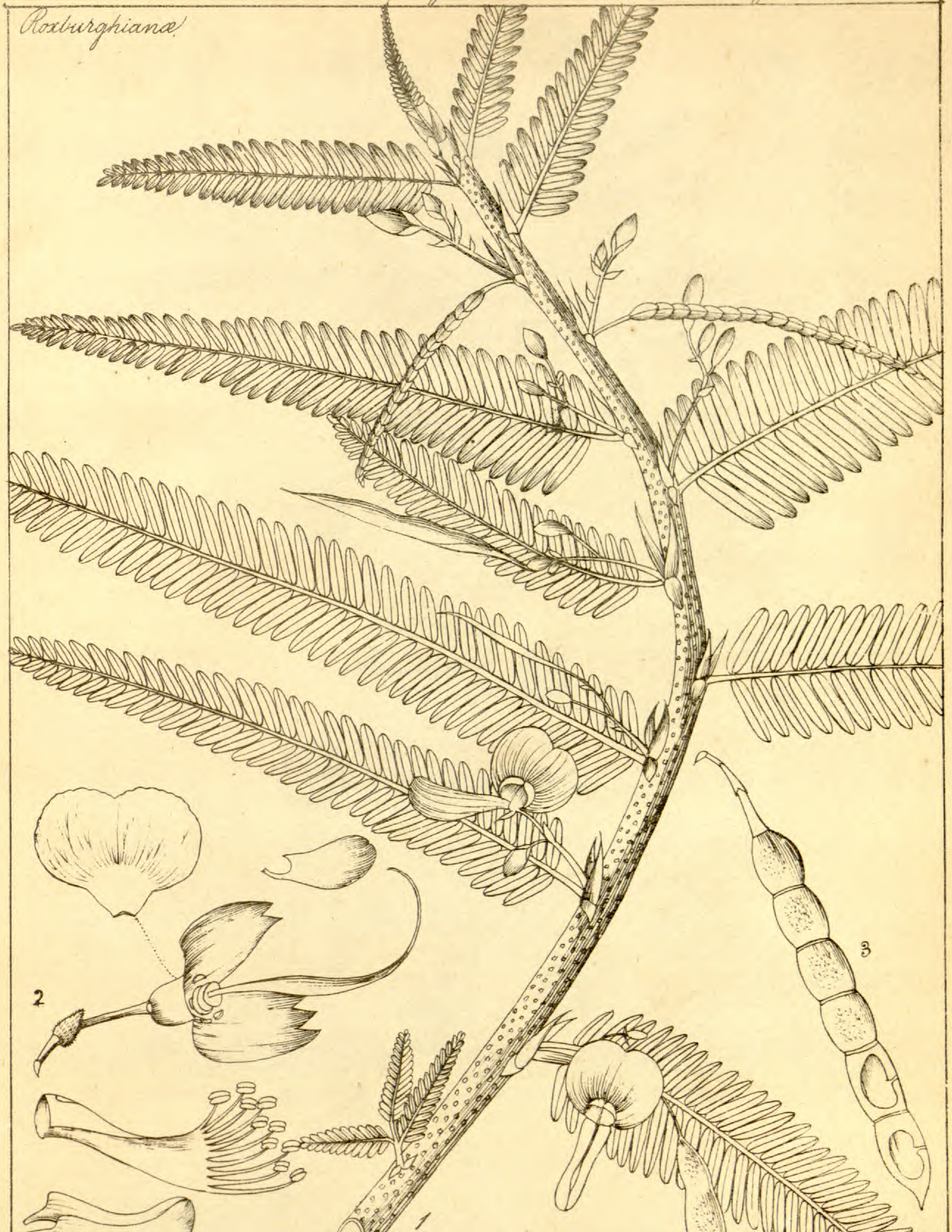
Ormocarpum sennoides (D.C.)
Hedysarum sennoides (Roxb.)

Roxburghianæ

Desmodium diffusum (D.C.)
Hedysarum auriculatum (Roxb.)

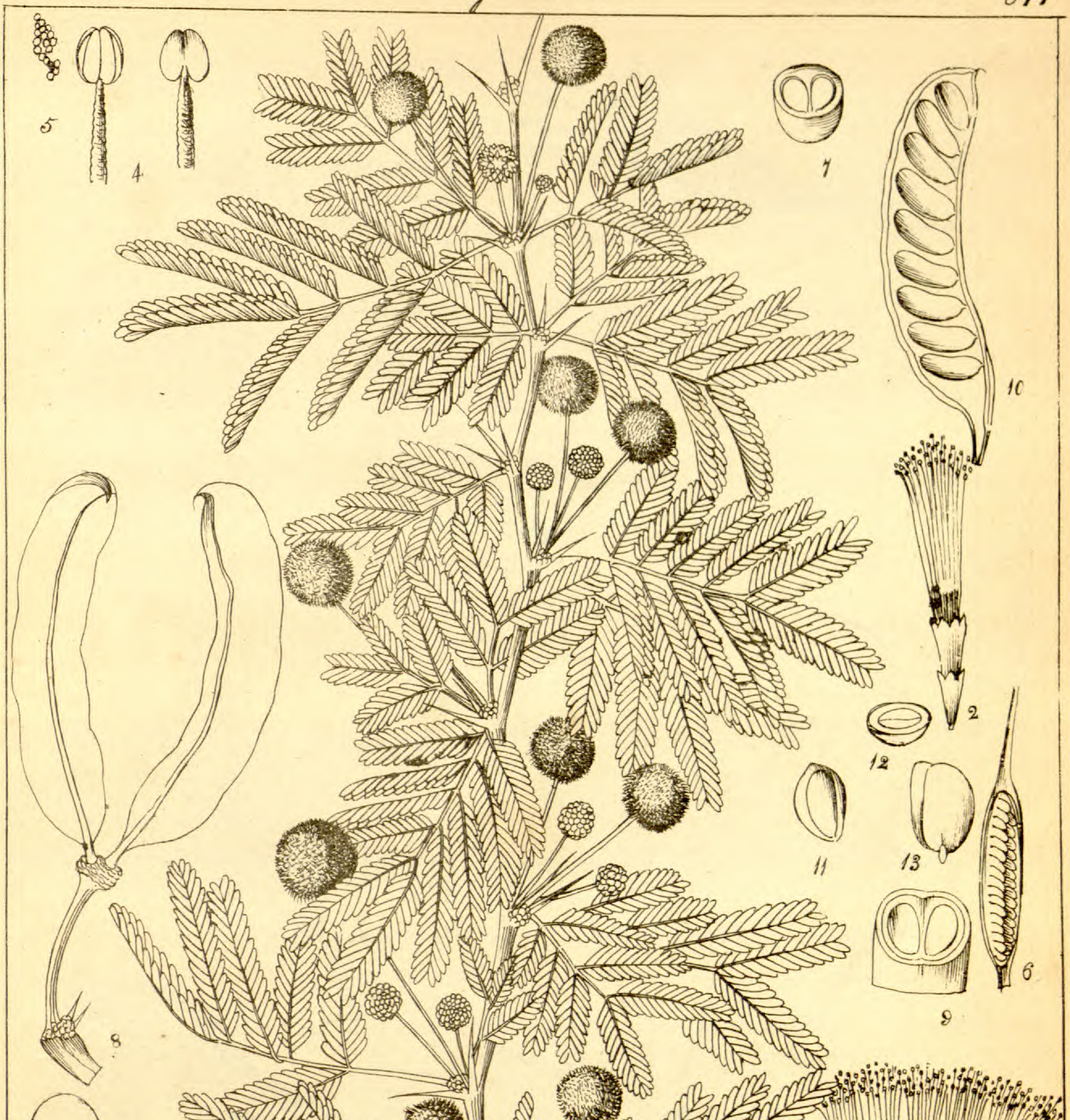
Dumphy, Lith.

Roxburghianæ.



Dumphy, Lith.

Æschynomene aspera (Linn.)
Hedysarum lagenarium (Roxb.)



கருவேலமரம் Curroovalamurum } Tam. *Vachellia Farnesiana (W & A)* నల్ల తుమ్మచెట్టు Nullathoomoochetty } Tel.

Rungiah, del.

Winchester, Lith.

Loranthus amplexifolius (D.C.)

செஙகட்டான்மாத்துபிலலுருவி
Sengatanmarathoopilloorwee } Tam

Rungiah, del. Dumphy, Lith.

Loranthus longiflorus (Desr)

Rungiah, del.

Dumphy Lith

Loranthus loniceroides, (Linn)

Rungiah, del. Winchester, Lith.

Loranthus capitellatus (W & A)

Rungiah, del.

Dumphy, Lith

Loranthus Candolleanus (W & A.)

Rungiah, del. Dunphy, Lith.

Loranthus lageniferus (Wight)

Runyan del.

Dunphy. Lith.

Hedera trifoliata (W & A)

Ionidium suffruticosum (Ging)

Stylocoryne Webera (A. Rich)

[illegible] del Dunphy, Lith.

Griffithia fragrans (W&A.)

Rungiah, del.

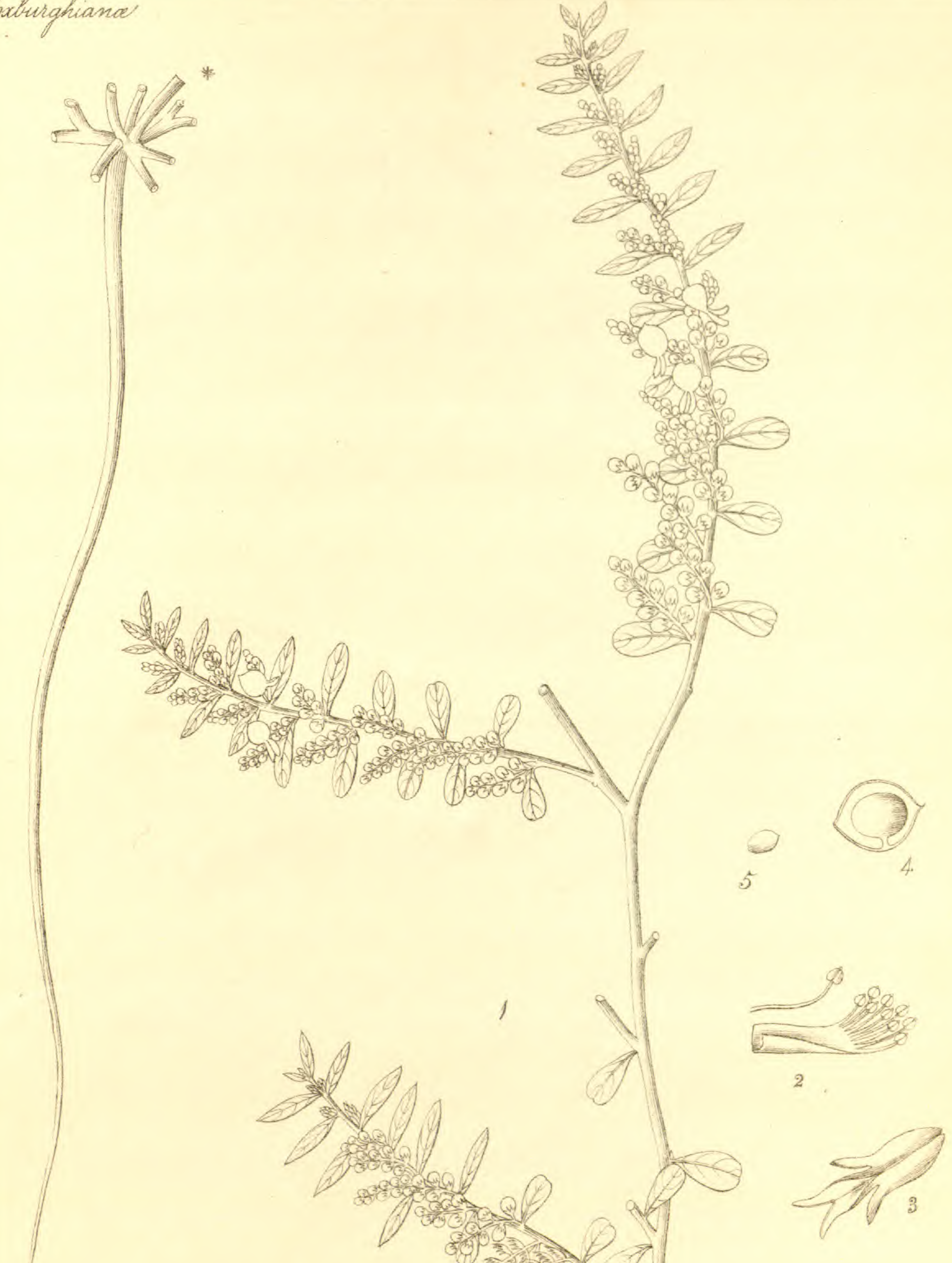
Corchorus capsularis (Linn)

Dumphy, Lith.

Rungiah, del. Dunphy, Lith.

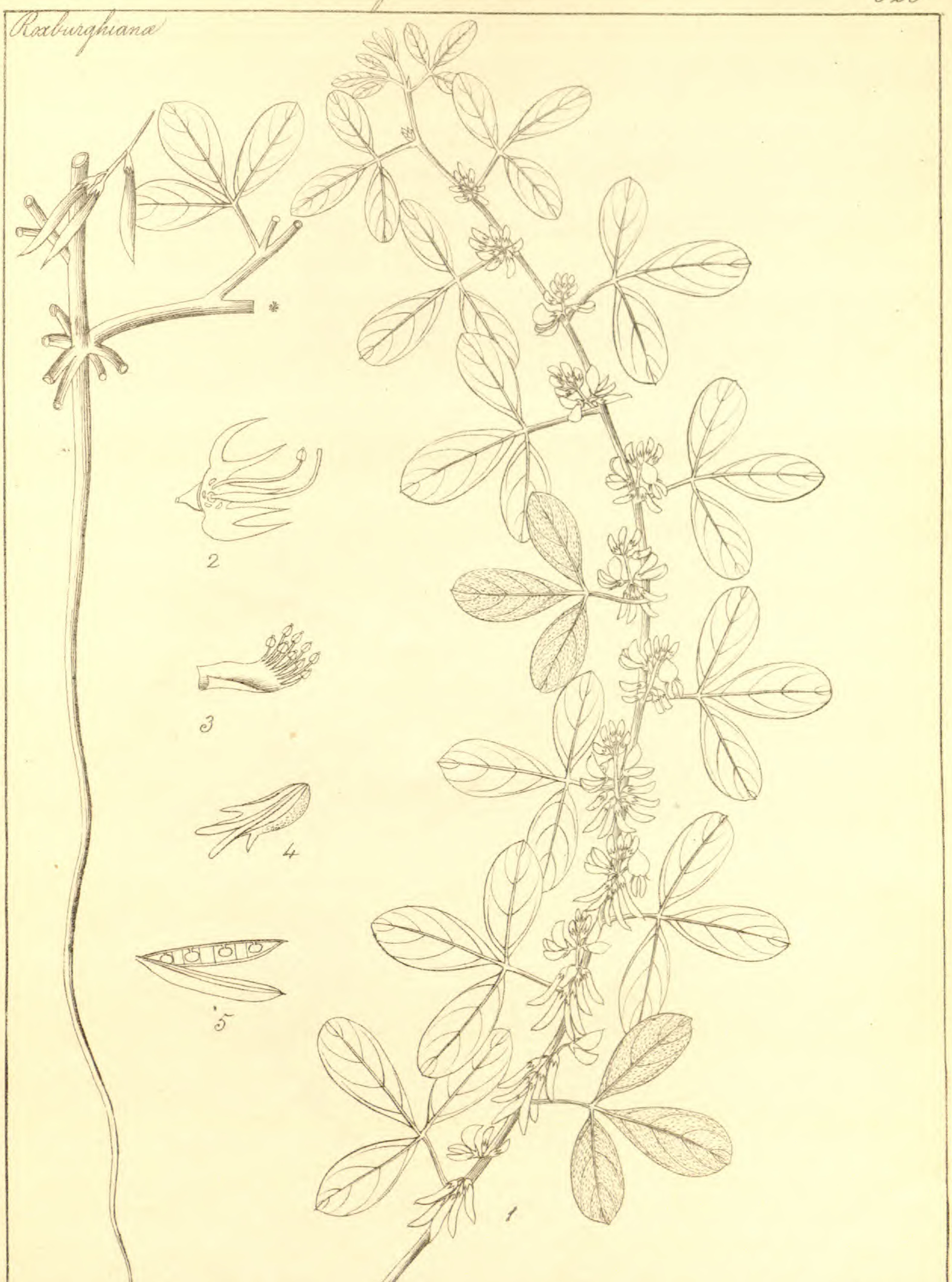
Hedyotis racemosa (Lam.)

Roxburghianæ



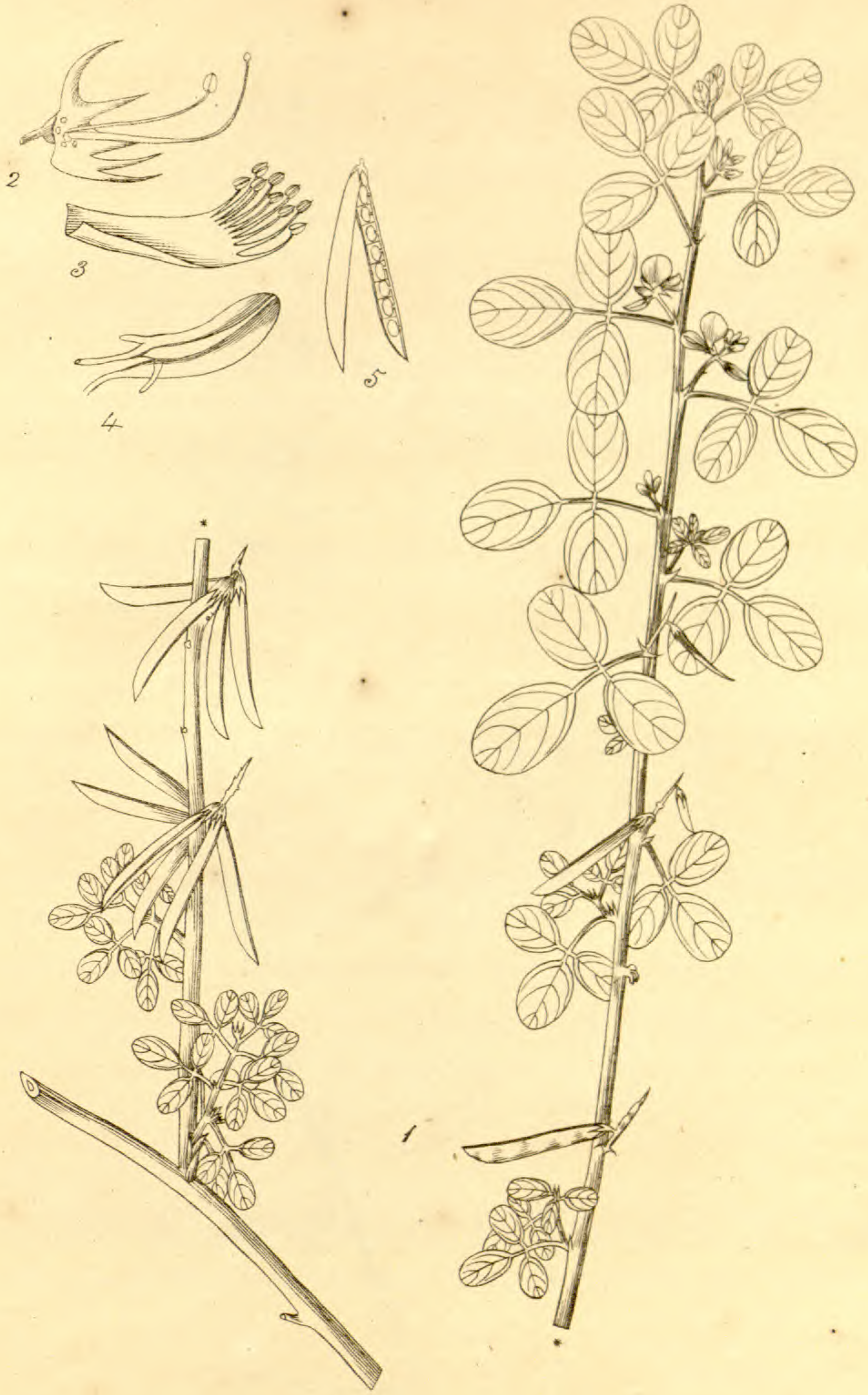
Winchester, Lith.

Indigofera linifolia (Retz.)



Indigofera trifoliata (Linn)
Indigofera prostrata (Roxb.)

Roxburghianæ



Dumphy, Lth.

Indigofera trita (Linn.)

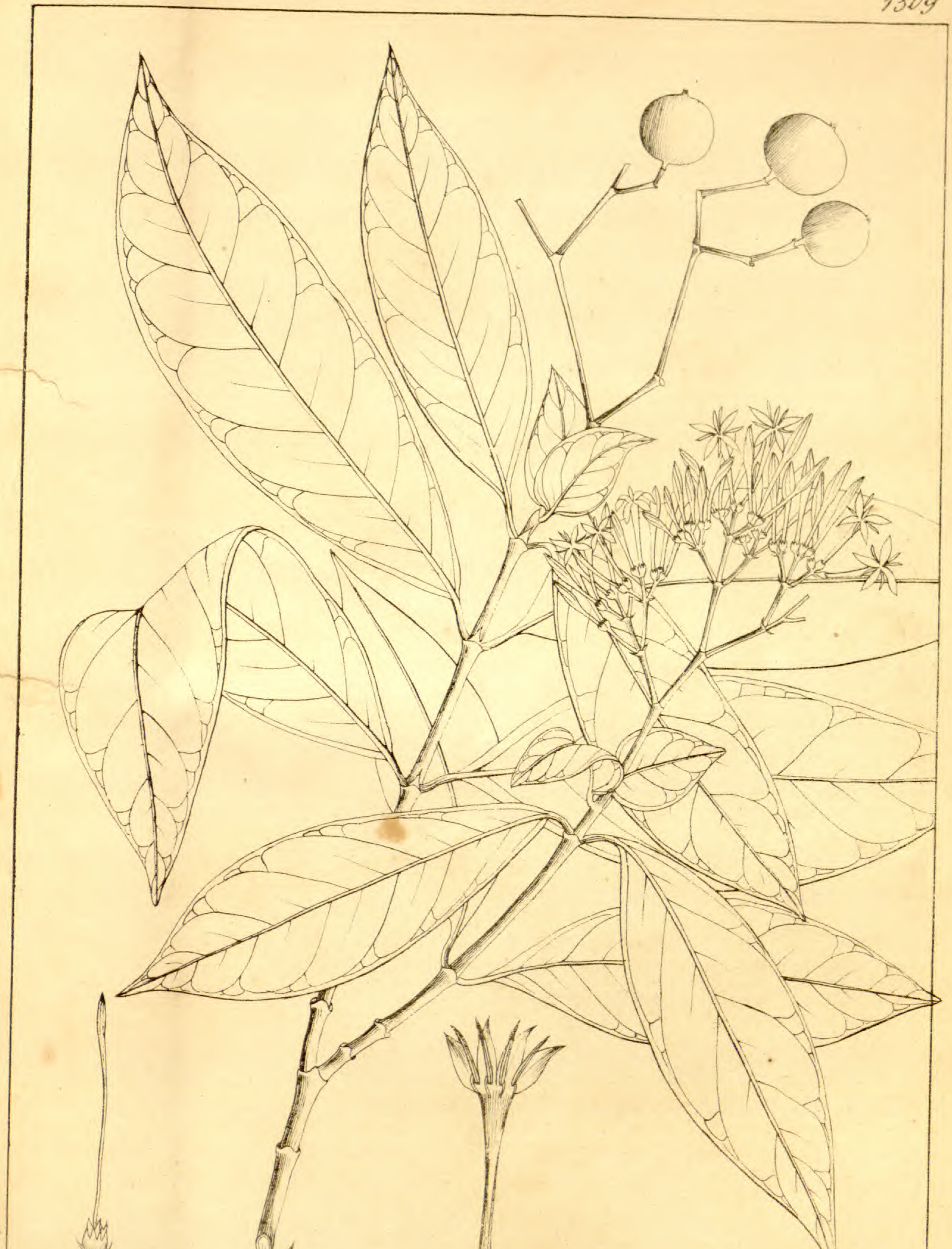
Roxburghianæ.

Dunphy, Lith.

Indigofera echinata (Willd)

Rungiah, del.   Dumphy, Lith.

Stylocoryne monosperma (W&A)



Ixora nigricans (Br.)

ஊதாப்பூ
Oothapoo } Tam.